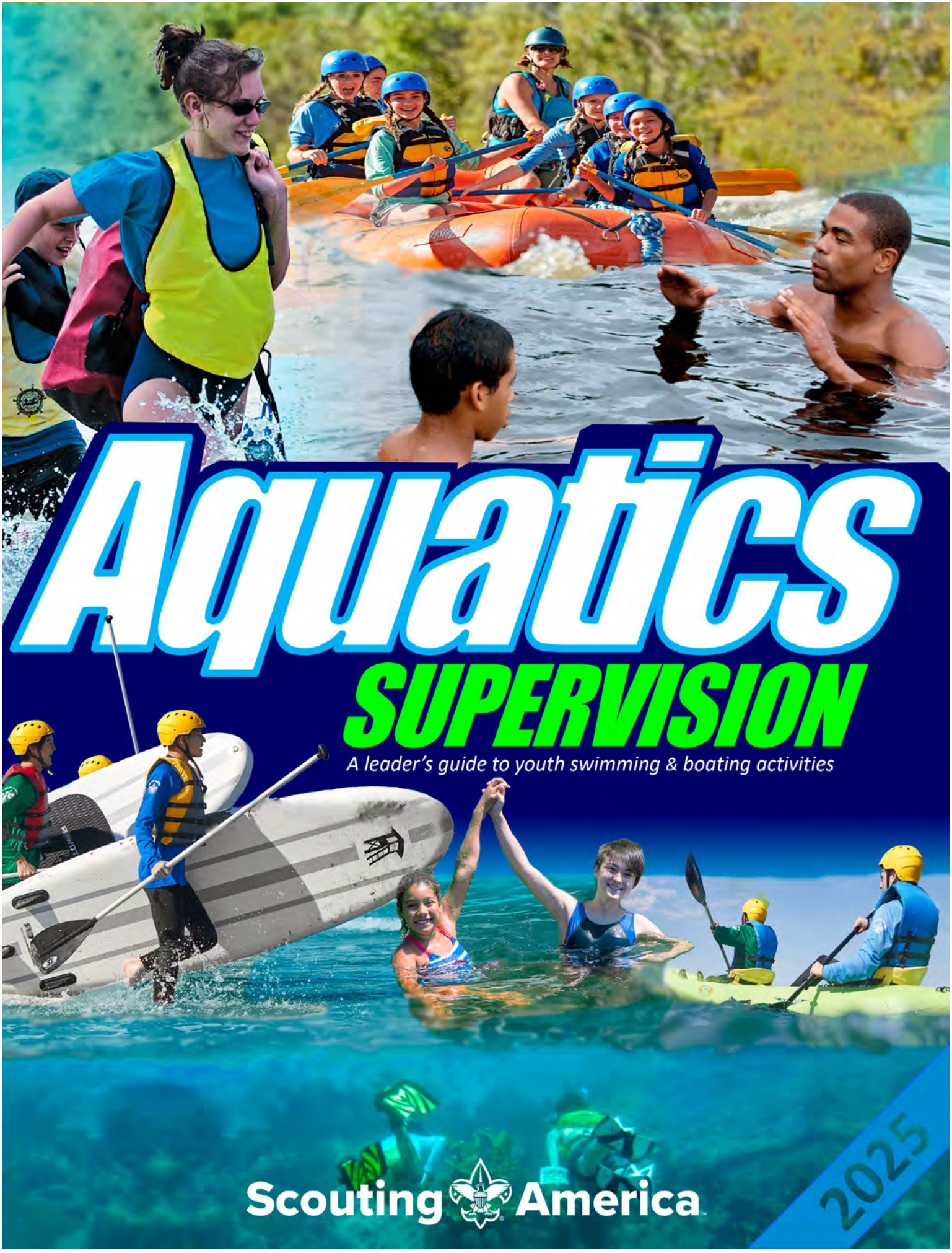

Aquatics SUPERVISION

A leader's guide to youth swimming & boating activities

Scouting America

2025

Scouting America's Commitment to Safety

In Scouting, we will not compromise the safety of our youth, volunteers, and employees. Safety is a value that must be taught and reinforced at every opportunity. We are all responsible and must hold each other accountable to provide a safe environment for all participants.

We are committed to abuse prevention by utilizing:

- Mandatory youth protection training.
- Criminal background checks.
- Banning one-on-one adult and youth interactions.
- Mandatory reporting of suspected abuse to law enforcement.
- A volunteer screening database.

We are committed to injury and illness prevention by integrating safety measures in our handbooks, literature, and training materials including the Guide to Safe Scouting.

We expect leaders to use the four points of SAFE when delivering the program. SAFE Scouting measures include:

- Youth are Supervised by qualified and trustworthy adults who set the example for safety.
- Activities are Assessed for risks.
- Pre-requisite Fitness and skill levels are confirmed before participation.
- Appropriate Equipment is utilized, and Environmental conditions are monitored.

When incidents do occur, we expect a timely, clear, and complete incident report. We are committed to learning from the data and modifying program guidance for the prevention of future occurrence

Aquatics Supervision

A Leader's Guide to Youth Swimming and Boating Activities

This guide is distributed via free download of a PDF file at:

https://www.scouting.org/outdoor-programs/aquatics/forms/

ADDENDUM

This 2025 update is a major revision and replaces all content of previous versions. Included links and QR codes were valid when uploaded but are subject to change.

Future updates will be summarized here.

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Scouts and their parents expect all Scouting America activities to be conducted safely. To ensure the safety of participants, Scouting America expects leaders to use the four points of SAFE when delivering the Scouting program.

SUPERVISION

Youth are supervised by qualified and trustworthy adults who set the example for safety.

ASSESSMENT

Activities are assessed for risks during planning. Leaders have reviewed applicable program guidance or standards and have verified the activity is not prohibited. Risk avoidance or mitigation is incorporated into the activity.

FITNESS AND SKILL

Participants' Annual Health and Medical Records are reviewed, and leaders have confirmed that prerequisite fitness and skill levels exist for participants to take part safely.

EQUIPMENT AND ENVIRONMENT

Safe and appropriately sized equipment, courses, camps, campsites, trails, or playing fields are used properly. Leaders periodically check gear use and the environment for changing conditions that could affect safety.

Aquatics Supervision is a resource for leaders to apply the four points of **SAFE** when delivering swimming and boating activities as part of the Scouting program. This guide covers programs, policies, training courses, skills, equipment, environments, risks, risk mitigation, and prohibited activities. However, every possible contingency may not be covered with a hard-and-fast rule, and rules may be poor substitutes for experience. Ultimately, each and every leader must decide if they are sufficiently trained, experienced, and informed to make rational decisions to meet **SAFE** expectations.

Aquatics SUPERVISION

A leader's guide to youth swimming & boating activities

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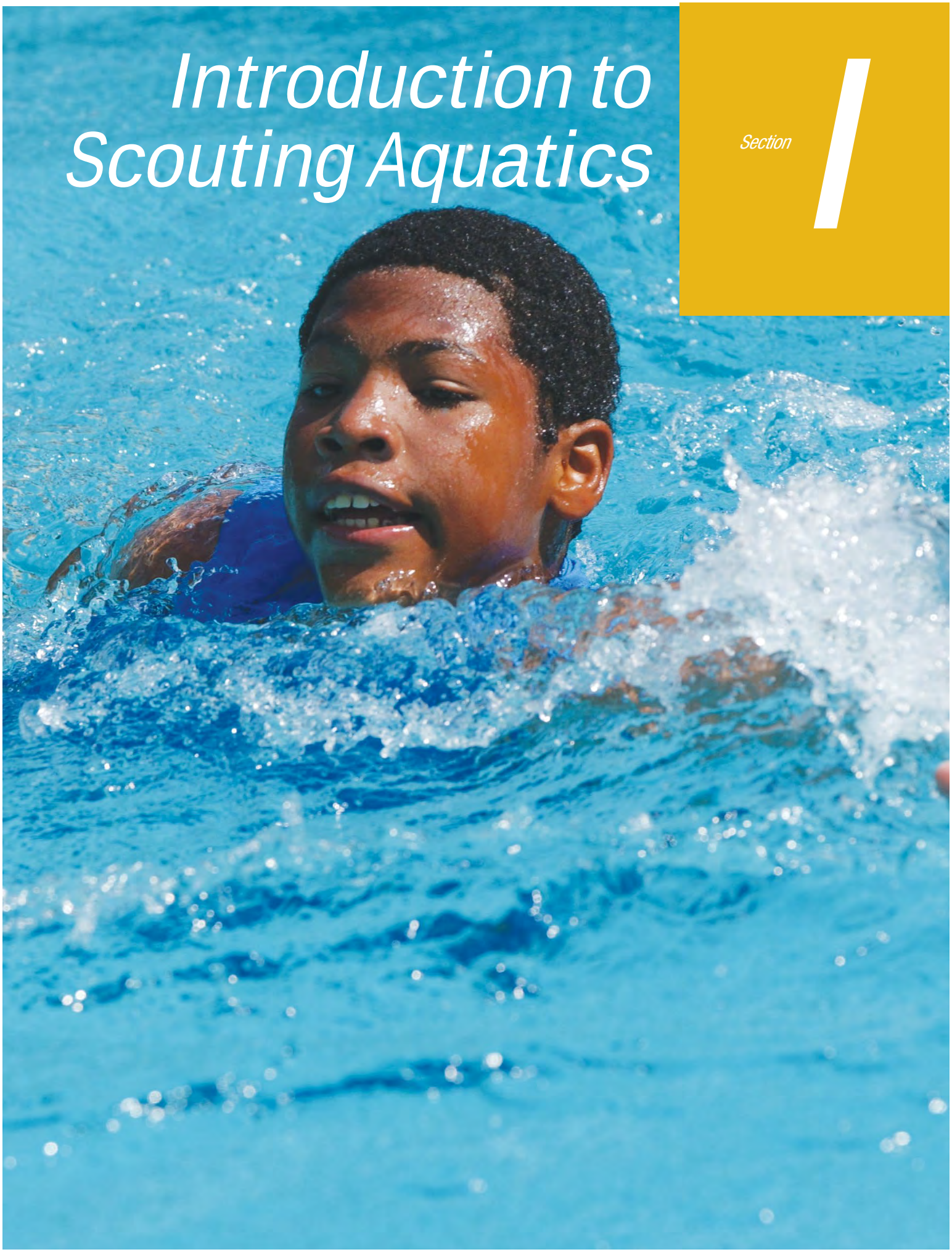
Section III - Boating Skills and Safety

Section IV - Program Delivery

Introduction to Scouting Aquatics

Section I



Chapter 1

Qualified Supervision: Roles and Responsibilities of Unit Leaders

All program divisions of Scouting America, from Cub Scouting through Venturing, use responsible outdoor adventure programs to promote character development and values-based leadership training. Activities in and on the water constitute a large subset of the programs that attract youth to and retain youth in the movement. Over a million youth participate yearly in aquatics activities during Scout outings under the leadership of thousands of adult volunteers.

The Scouting program is delivered through small local groups led by volunteers and sponsored by local civic clubs, churches, schools, and other organizations. Those groups, known generically as units, vary in size and name depending on the age of the youth being served. Units within a geographic division, or district, are assisted by professionals employed by a council. Individual units often take advantage of council summer camps where trained staff members assume the responsibility for quality program delivery, but many units also conduct aquatics activities under their own leadership. Youth camps conducted by other organizations are often standalone programs limited to a short duration in the summer. Scout camps are simply one element of a year-round unit program. Scouting America encourages unit aquatics initiatives, whether it is a den leader taking advantage of a parent's offer of a backyard pool, or a crew taking off on its own Boundary Waters canoe trek from a Northern Tier National High Adventure base camp.

A key to safe, effective unit aquatics activities is informed and conscientious unit leadership. Serious mishaps during Scouting America events are rare. Although various aquatics activities can involve some degree of risk, those risks are mitigated by the training and commitment of Scouting's volunteer leaders. Properly conducted swimming and boating programs are usually safe as well as fun, exciting, and rewarding.

Supervision is the first point of Scouting America's **SAFE**. According to the Guide to Safe Scouting, supervision for unit aquatics activities includes the following:

All swimming and activity afloat must be supervised by mature and conscientious adults, age 21 or older, who

- **understand and knowingly accept responsibility for the well-being and safety of youth members in their care,**
- **are experienced in the particular activity,**
- **are confident in their ability to respond appropriately in an emergency, and**
- **are trained and committed to the nine points of Scouting America's Safety Afloat and/or the eight points of Safe Swim Defense.**

The Den Leader, Cubmaster, Scoutmaster, crew Advisor, or Skipper who accompanies the unit on an outing is responsible for the first and last bulleted points. However, Scouting America policies do not specify that the unit leader must be the one who satisfies all of the above criteria. Under appropriate circumstances, the unit leader may delegate responsibility to others. For example, a Scout troop at a water park with trained lifeguards on duty need not assign separate unit personnel to perform water rescue. A Venturing crew on a whitewater excursion may rely on a licensed outfitter to provide the necessary equipment and trained guides.

As the above examples demonstrate, a unit can participate in fun and challenging aquatics activities even if unit leaders lack the knowledge and skill to conduct the activity themselves, provided leaders ensure that others, such as venue staff, provide the required components. On the other hand, a troop on its way to a jamboree need not forgo the use of a hotel pool just because the facility does not employ a professional lifeguard, provided unit leaders are properly prepared.

This publication provides unit leaders with information needed to determine when proper safeguards are in place for a unit aquatics activity, whether those safeguards are provided by a facility operator or the unit itself. Basic skills needed by the unit to function on its own are reviewed, as well as what to look for in a facility or operator.

After a review of this material, unit leaders should be confident in their ability to judge when an aquatics activity is safe, when the risk is unacceptable, or when their background is insufficient to make that determination. Experienced, informed leaders often develop a sixth sense or intuition with regard to an action. When an activity exceeds the leader's comfort zone, it should be curtailed or modified.

Chapter 2

Scouting America Aquatics: A Wealth of Opportunities

A review of program opportunities is appropriate before discussing how to conduct those activities safely. This information also provides a basic Scouting background for volunteers whose aquatics training is from other agencies. Probably no other organization provides its members the range of aquatics pursuits that Scouting offers. Scouting tailors these programs to match the maturity of the youth in various divisions, from Lions in kindergarten through 20 year-old Venturing members.

All aquatics program activities comply with Scouting America's *Safe Swim Defense* and *Safety Afloat* standards, which will be covered extensively in the following chapters. Most of the aquatics activities also require the Scout to pass a basic 100 yard swimmer classification test. Therefore, teaching the nonswimmer to swim is of primary importance, both for safety and to give youth members the opportunity to participate with their peers in all aspects of the program.

Cub Scout Aquatics Programs

The basic Cub Scout unit is a **den** of six to eight youth of the same sex in the same grade served by an adult den leader. Dens are organized into **packs** under a Cubmaster.

The Cub Scouting program is based on age or school year. A child in the third grade who joins Scouting begins the program at that stage without completing the kindergarten, first- and second-grade modules.

Children in kindergarten and the first grade participate in Lion and Tiger programs with an adult partner. Youth in second and third grades work toward Wolf and Bear ranks. Cub Scouts in the fourth and fifth grades undertake more advanced activities while working on the Webelos and Arrow of Light ranks.

Cub Scouts experience a series of adventures either individually with their family or as part of their den. There are required adventures for each rank plus electives. Each rank has an elective adventure that focuses on swimming skills and safety. In addition, four of the ranks have boating adventures. Immediately after completing an adventure, the Cub Scout is presented with the appropriate belt loop or pin.

Youth resource materials for the elective aquatics adventures are found in the handbooks for each grade level. Step-by step resource material for den leaders is available online at www.scouting.org/programs/cub-scouts/adventures/. The material is progressive and age appropriate. For example, Lions learn Safe Swim Defense concepts by coloring pages in a workbook, whereas Webelos practice the buddy system and other aspects of Safe Swim Defense during a recreational swim. Tigers learn how to build a boat from a sheet of paper, whereas Bears, who can pass the swimmer test, get to paddle a boat on the water.

Lion: Time to Swim

Tigers in the Water, Floats and Boats

Wolf: Paws for Water

Bears Afloat, Salmon Run

Webelos:
Aquanaut, Paddle Onward

Swimming, Padddlecraft

Swimming is an important life skill. Children may be introduced to the water as toddlers, or even younger, but they don't become proficient at swimming until later. The early school years are a good time to teach children to swim, either individually by a knowledgeable parent or in a group with a qualified instructor (see Chapter 8) Since a single set of lessons typically does not impart the desired water competency, it is important to continue instruction and to closely supervise activities until comfort in the water approaches that of walking. Cub Scouts whose dens consistently choose the water electives will be well served. Ideally, all Cub Scouts should progress from nonswimmer, to beginner, to swimmer during their Scouting experience.

Den leaders need not be water competent themselves to successfully guide their dens through several of the aquatics adventures. All of the swimming adventures may be earned by youth who participate in accredited learn-to-swim programs. Leaders should check for swimming lessons offered by local communities, YMCA's, and Red Cross providers. Financial assistance is often available as well. Den leaders may also seek guidance from their local council aquatics committee. That committee may help arrange learn-to-swim opportunities for dens and may also help districts incorporate water adventure elements into Cub Scout day and resident camps. (If your council lacks such a committee, see Appendix 1.)

Scouts BSA Aquatics Programs

A youth, age 10 or older, can join a Scouts BSA **troop** near completion of the fifth grade and may continue with the program through age 17. Youth may join at any age within that range and need not have participated in Cub Scouts.

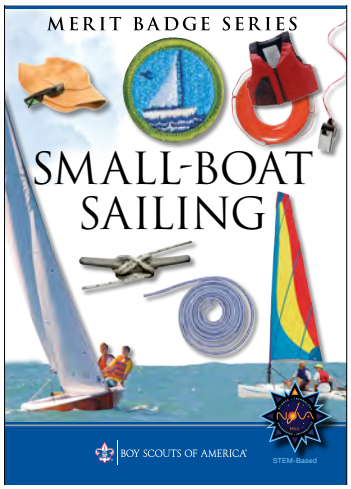
Troops are served by adult Scoutmasters and are subdivided into **patrols** of eight to ten under youth leadership. Scouts BSA advance in rank from Tenderfoot to Eagle Scout. Recognition is achieved by meeting standards of performance. That is in contrast to the Cub Scouting program where youth are rewarded for "doing their best," or some outside sports programs with an emphasis on competition. Each Scout progresses through the ranks in order, regardless of the age they join.

Many troops are single gender. However, two linked troops, one for boys and one for girls, may share a single sponsoring organization and troop committee. A combined, coed troop option is being piloted in 2025.

For Scouts BSA, both Second Class and First Class ranks require demonstration of basic swimming skills and aquatics safety. Those requirements are found in the *Scouts BSA Handbook*. To advance to Eagle Scout rank, a Scout must know how to swim.

Specialty skills are learned by earning merit badges that also count toward rank advancement. There are several aquatics merit badges, described below. Each of those requires the Scout to first pass a swimmer classification test. If youth have not learned to swim at earlier ages, troops should arrange for basic swimming instruction so that Scouts are able to meet the Second and First Class rank requirements and continue with the aquatics merit badges. Instruction can be done at the troop level by working directly with individual Scouts or arranging for them to enroll in various learn-to-swim programs. Some districts offer winter programs that include basic swimming instruction. All troops have access to council summer camp programs where basic swimming instruction is offered and tied to rank requirements as an incentive.

Merit Badges



Scouts BSA earn merit badges by working with an approved counselor registered with Scouting America. Scouts are connected with counselors through their Scoutmaster. Adults wishing to serve as counselors should review Appendix 2 and contact a Scoutmaster or the council office. Pamphlets for each merit badge list requirements and performance standards. Counselors are expected to present and evaluate the skills as specified in those pamphlets. Counselors are often aware of alternative or advanced techniques. However, merit badge material is specifically designed for those of Scout age and serves as an introduction to a subject requiring basic skills rather than professional expertise. Merit badge material is reviewed regularly. Scouts and counselors should check that they have the most recent pamphlet by comparing the requirements with those listed at scouting.org. Since special equipment is required for some of the aquatics merit badges, Scouts earn many of them when the troop attends a week long summer camp with trained counselors on-site. However, all merit badges may be earned year-round by a Scout and a buddy working with a counselor.

The **Swimming** merit badge is among the most popular, second only to First Aid for many years and ranking third, out of 138, in 2024. Over 6.6 million have been earned since the badge was first introduced in 1911. That's an average of 60,000 per year. Requirements include proficiency in several strokes as well as associated swimming and safety skills. Many children learn the basics of swimming at an early age but stop formal lessons before becoming proficient in the strokes. The Swimming merit badge polishes the skills needed for a person to be competent, and confident, in the water. The Swimming, Hiking, or Cycling merit badge is required for Eagle Scout rank.

The **Lifesaving** merit badge teaches the Scout a progression of water-rescue techniques. It is one of the few remaining programs in the United States that instructs good swimmers how to deal with the range of emergency situations likely to be encountered inadvertently in and around the water. Those include in-water rescues that are essential to save a victim from the bottom of a backyard pool. Swimming merit badge is a prerequisite.

The need for a broad water-rescue course, even for those of Scout age, is easily demonstrated. Over many decades, Scouting America has awarded thousands of medals to Scouts and Scouters of all ages, including Cub Scouts, who rescued people from drowning. Those rescues are reported by active members. Rescues performed by the millions of former members are not as easy to track. Many of those performing rescues have not earned the Lifesaving merit badge, which is one reason basic water-rescue techniques are discussed throughout the program rather than only for this specific badge. Scouts of all ages do encounter situations where their actions are critical for saving lives. Most children faced with a friend or sibling in danger will attempt some action. Scouting America strives to give youth the tools needed to make proper decisions in such circumstances. Rescuer safety is a major emphasis of the program. A Scout must earn either the Lifesaving or the Emergency Preparedness badge for the Eagle rank. In 2024, Lifesaving merit badge ranked 29th in popularity out of 138. It was introduced in 1911 with over 3 million earned to date.

The **Kayaking** merit badge teaches basic kayaking skills and safety for calm water. Those skills support the very popular use of kayaks for recreational activities and also serve as a lead-in to advanced paddle sports such as sea/touring and whitewater kayaking. It was introduced in 2012 and rapidly became one of the most popular outdoor merit badges with 36,000 earned the following year. In 2024, it ranked 21st in popularity.

The **Canoeing** merit badge is designed to provide a Scout with tandem skills to safely and efficiently travel on flat water. Over 3 million have been earned since it was introduced in 1927. In 2024, it ranked 25th in popularity.

The **Whitewater** merit badge extends skills learned in earning Canoeing or Kayaking badges, either of which is a prerequisite, to cover Class I and Class II flowing water. Because special equipment, settings, and instruction are required, this merit badge is not accessible to as many Scouts. In 2024, it ranked 108th in popularity.

The **Rowing** merit badge covers basic rowing techniques applicable to conventional and sliding-seat rowing. Although craft designed and equipped for rowing are not that common, this remains a popular merit badge, particularly at summer camps. It ranked 75th in popularity in 2024.

The **Small-Boat Sailing** merit badge gives an introduction to basic sailing techniques and seamanship. It ranked 37th in popularity in 2024.

The **Motorboating** merit badge covers basic boat handling and safety. Scouts are not allowed to operate a motorboat without a counselor on board and must adhere to state regulations that sometimes mandate additional age and skill requirements. It ranked 62nd in popularity in 2024.

The **Water Sports** merit badge requires basic skills in either waterskiing or wake boarding. It ranked 125th in popularity in 2024.

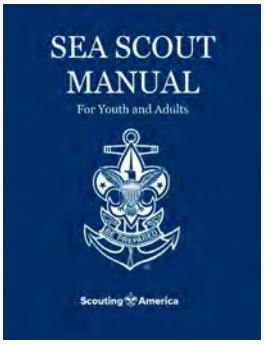
The **Scuba Diving** merit badge requires the Scout to first earn the Swimming merit badge and to then obtain Open Water Diver Certification from a dive training agency recognized in Scouting's policy on scuba. This high-adventure, environmental awareness program sets the stage for lifelong recreational and professional pursuits. Numbers are lower than other badges due to cost along with specialized equipment and instruction. However, more than 25,000 have been earned since the merit badge was introduced in 2009. It ranked in 126th in popularity in 2024.

Venturing Programs

Venturing is a youth led, coed program for young men and women ages 14 to 20, or 13 with completion of the eighth grade. The program runs under the A-L-P-S model with four content areas: adventure, leadership, personal growth, and service. Leadership of a Venturing **crew** is provided by the members under consultation with adult Advisors. Venturers may earn the Venturing, Discovery, Pathfinder, and Summit awards which include participation in Crews in various adventure treks. Those may involve aquatics activities such as wilderness canoeing, whitewater rafting, sailboat cruising, and scuba diving. Aiding them in such efforts is a network of Scouting America high-adventure bases.

Sea Scouting

Sea Scouting is a youth led, coed program for older youth who love to have fun on, in, or under the water. Sea Scout units, called **ships**, may be found in all areas of the country, not just near the coasts. The program is based on four pillars: Seamanship, Scouting, Service, and Social. Depending on personal aspirations, Sea Scouts can build adventures around recreational boating, marine industry, and/or military tracks. Members may work on advancement, culminating in the Quartermaster award. The 2025 edition of the Sea Scout Manual is available for free download at https://seascout.org/manual-resource-center/



Special Aquatics Awards

Several Scouting America aquatics activity awards, not tied to advancement, promote water safety and are available to Scouts BSA, Venturers, and Sea Scouts, but not Cub Scouts. Material covering skills for the awards is presented in this publication, and application forms are provided in Appendix 3. Training cards and patches are also available.

In Scouting, the emphasis is on programming for youth. However, some of these awards promote important skill and safety information that will help a unit leader conduct a safe unit activity. Therefore, these awards may also be earned by unit leaders and other registered volunteers (collectively known as Scouters). Often, training sessions are more effective when conducted separately for different age groups, but in some situations it is more practical for unit leaders to attend the same training sessions as unit members. Generally, Scouts should be given priority over Scouters when equipment is limited.

Mile Swim This award promotes water competence as well as physical fitness. The main requirement is to swim a continuous mile in safe conditions. The distance may be covered in a pool, a designated swim area, or in open water. Policies for distance swimming in open water are covered in detail in Chapter 7. Although the Mile Swim recognition helps to build stamina, those who has mastered restful swimming strokes such as the elementary backstroke, the sidestroke, or the restful breaststroke should be able to complete the distance with ease. There is no time limit for completing the swim.

Snorkeling This award encourages the development of basic skills using a mask, snorkel, and fins. The requirements must be completed in clear, confined water. Snorkeling award skills are prerequisites to unit snorkeling activities in open water. Such activities are covered by Safe Swim Defense and similar guidelines reviewed in Chapter 12 along with a presentation of the skills.

Scuba In earning this award, Scouts and Scouters get an introductory scuba experience in clear, confined water conducted by a professionally trained scuba instructor. It is not a scuba certification program. Details on Scouting America scuba policies are provided in Chapter 12.

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Kayaking This award recognizes the popularity of kayaking both in the public and in Scouting. It was introduced several years prior to the advent of Kayaking merit badge, which covers similar skills. The award was retained after the merit badge became available since it may be earned by youth in Venturing and Sea Scout programs as well as adults. Kayaking award skills are covered in Chapter 17.

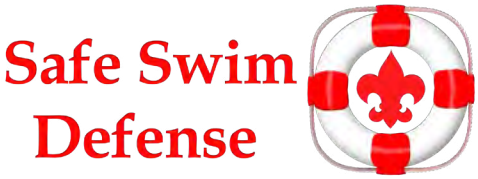
Boardsailing This award was introduced when boardsailing first became popular and remains a basic introduction to the sport. Skills necessary for the award are discussed in Chapter 25.

Stand Up Paddleboarding This award provides basic skill and safety instruction for stand up paddleboarding in calm water. Skills are covered in Chapter 19.

Whitewater Rafting Many Scouting units participate in rafting trips conducted by outfitters or councils. This award recognizes the challenge and adventure of such activities. Requirements focus on safety and basic paddling skills on white water up to Class III. All instruction and skill completions are directly supervised by a professionally trained or licensed rafting guide. A qualified raft captain must be in each raft during the required trip. Participants help power and control the raft with paddles—simply riding in a raft rowed by a guide is not sufficient. A review of skills and advice on choosing an outfitter are provided in Chapters 20 - 22.

Training Programs for Adults (and Older Youth)

Such diverse and extensive aquatics programs mean Scouting America must recruit and/or train volunteers to provide the program at the unit level, as well as professionals, full-time and seasonal, to assist units via camp operations. Several training options, in addition to the special awards, are available to registered adults and older youth to meet unit and summer camp staff needs.



Safe Swim Defense and Safety Afloat Commitment Training

Safe Swim Defense and Safety Afloat procedures apply during all Scout swimming and boating activities, and are covered in detail later in this manual. The plans emphasize prevention but also cover emergency recognition and response. Leaders supervising aquatics activities must have current training in the appropriate online modules. The requirement that leaders renew the online training every two years helps ensure that everyone receives the same information. The training is available at my.scouting.org.

Safe Swim Defense and Safety Afloat Skills Training

The introduction to rules and procedures provided by online training should allow conscientious leaders to assess their readiness to conduct a unit aquatics activity. However, the policies suggest or mandate various skills that cannot be learned online. To fill that gap, there are optional hands-on courses to provide unit leaders with basic skills. A**quatics Supervision: Swimming and Water Rescue** provides training for swimming activities. **Aquatics Supervision: Paddle Craft Safety** modules cover canoeing and kayaking skills for still and moving water environments. Situations requiring more advanced skills are reviewed, along with sources for such training. These courses are highly recommended for unit leaders whenever a unit swims at a location without professional lifeguards, or undertakes a boating expedition without a trained guide. This publication serves as the manual for the courses. Requirements are given in Appendix 3. The courses are taught by authorized instructors following standardized guidelines.

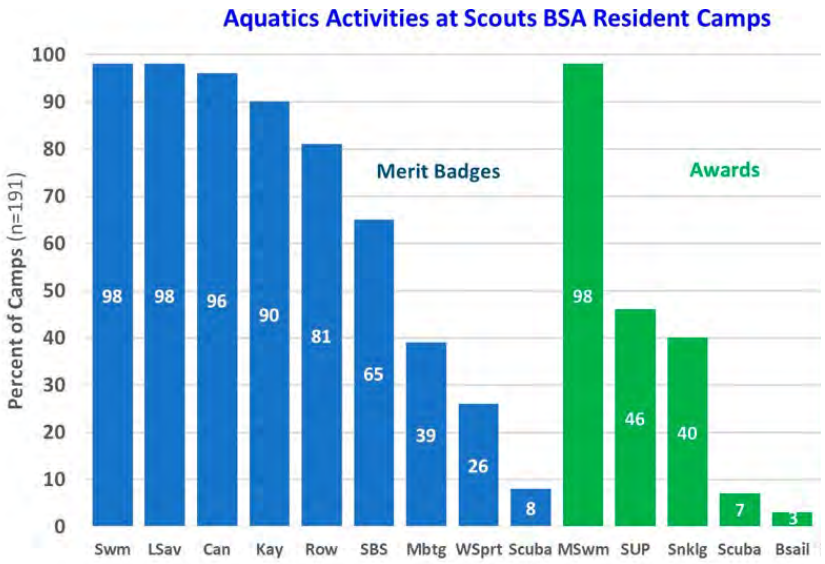
Scouting America Aquatics Instructor

Scouting America Aquatics Instructor, introduced around 1935, is the highest level of training, achievement, and recognition for adults in Scouting aquatics. The training prepares adults for leadership roles in year-round council aquatics programs and summer camps. Topics include a review of the goals, requirements, policies, and procedures for all Scouting aquatics programs; skills for swimming, snorkeling, lifesaving, and human-powered boating; how to teach those skills to participants of various ages; and how to manage the aquatics program at Scouting America camps. The training is recognized as both a Progressive Swimming Instructor rating and a Lifeguard Management/Supervisor course. The training is offered only in conjunction with a Scouting America National Camping School (NCS). Participants must be approved by their local council and must have current professional lifeguard training.

Scouting America camp standards require that aquatics directors at camps are 21 years of age or older, have current lifeguard, CPR, and first-aid training, and have current Aquatics Instructor training. However, Aquatics Instructor training is available to those age 18 or older. Councils are encouraged to send aquatics staff members who are below 21 years of age for Aquatics Instructor training. They can serve as assistant aquatics directors to fulfill supervision requirements for divided program areas and help provide quality programing. The experience they gain makes them excellent candidates to assume the camp aquatics director position without needing to attend NCS that year. Such a succession plan makes it easier for councils to manage staffing needs.

Council Camp Aquatics Programing

Few units have the resources to independently provide all of the programs listed above. However, local councils provide significant support to units by offering various camp facilities and programs. Most council camps offer multiple aquatics activities. The chart shows the percentage of Scouts BSA resident camps offering various aquatics programs. The Kayaking award is seldom offered in addition to Kayaking merit badge (Kay), which is provided in 90 % of camps.(Data from a 2019 survey of 191 camps from all fifty states.)



Council Aquatics Committees

Council camp resources are themselves sometimes limited. Formation of a volunteer council aquatics committee can help foster local programs, provide training, help recruit camp aquatics staff, and oversee council resources. Additional information on aquatics committees is found in Appendix 1.

Aquatics Adventure and Trek Programing

Some council camps offer units the option of a float trip, on or off council property. Some are simple day trips on flat water; others are week-long excursions on flowing water.

The National Council has approved roughly 60 council camps as high-adventure bases. While some feature various land based activities such as backpacking and climbing, others offer overnight canoeing, kayaking, rafting, or sailing treks. Some offer scuba certification, dive trips, or other advanced resident programs. *The Adventure Plan* (TAP) is a tool to guide unit leaders- Cubs, Scouts BSA, Venturers, and Sea Scouts - through all stages of Adventure planning, whether units use Scouting America camps, private outfitters, or "go-it-alone".

Scouting America also operates four national high-adventure programs, three of which offer aquatics programs.

Northern Tier National High Adventure

Northern Tier stages canoe treks from two base camps. As is the model for Scout camping in general, a troop or crew that meets year-round comes with its own adult leadership, although a council may recruit a contingent from several units and individual Scouts may be accommodated in special crews . Northern Tier normally provides a trained staff member to accompany inexperienced groups, but experienced units may elect to travel without guidance. Each summer, roughly 5,000 Scouts in groups of six to 11 take wilderness canoe trips lasting six to 10 days.

The Charles L. Sommers base camp near Ely, Minnesota, has been the starting point for trips into the Boundary Waters Canoe Area Wilderness since 1923 and has been an important part of the emergency response system for the area. The Rogert base camp near Atikokan, Ontario, accesses Quetico Provincial Park from the Canadian side.

High Adventure Sea Base

The Sea Base began operations in the 1970's and now operates two centers and a private, undeveloped island in the Florida Keys, as well as staging areas in the Bahamas and Virgin Islands. The Sea Base operates one of the largest scuba training programs in the United States with roughly 1,500 participants yearly. While many participants seek scuba certification, those already certified may dive from boats stationed at the base or from live-aboard catamaran sailboats. Another 9,000 or so engage in various boating activities. Some kayak to a 110 acre island owned by the base and camp Robinson Crusoe-style. Others sail on live-aboard vessels from which they snorkel and fish. The Sea Base also runs a coral restoration program.

Summit Bechtel Reserve

The newest Scouting America national facility is the Summit Bechtel Reserve in West Virginia. The Summit site includes the Paul R. Christen High Adventure Base and the James C. Justice National Scout Camp. The Summit is not limited to aquatics: It has world-class climbing, canopy tours, mountain biking, and other high-adventure activities. However, it is adjacent to the New River Gorge National River managed by the U.S. National Park Service. Because the New River Gorge is home to some of the world's best white water, whitewater programs are central experiences at the Summit. The Summit is also the home of Scouting America's National Jamborees and hosted the 2019 World Jamboree with over 40,000 youth and leaders from 152 nations.

Relationships with Other Organizations

Scouting America recognizes that other organizations provide expertise in specialized activities, such as waterskiing, and works with those organizations to keep Scout aquatics programs up-to-date. In particular, the National Council has agreements or understandings with the American Red Cross, the Professional Association of Diving Instructors, the American Canoe Association, the United States Coast Guard Auxiliary, and America's Boating Club. Scouting America is also a founding member of Water Safety USA, a roundtable of seventeen national not-for-profit and government organizations that promote water safety and drowning prevention.

Training provided by other organizations extends the base of volunteers with the necessary background to offer quality Scouting programs. However, Scouting America programs are not simply copies of programs offered by other agencies. In areas such as Safe Swim Defense, Scouting is a recognized leader in the field. In other areas, such as scuba training, an instructor rating from an outside agency is required to offer the Scouting programs. In that case, the Scout program may be more limited than similar programs offered by the instructor's certifying agency. Therefore, outside instructors need to become familiar with specific Scouting America policies and requirements, including youth protection, before conducting activities for Scouts. This manual provides a useful overview, but activity-specific literature, such as merit badge pamphlets, should be consulted. Also note that each merit badge pamphlet solicits suggestions for improvement and provides an address for sending comments.

American Red Cross

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WATER SAFETY USA

American Academy of Pediatrics
American Red Cross
Centers for Disease Control and Prevention
Diversity in Aquatics
National Drowning Prevention Alliance
National Park Service
National Safe Boating Council
Pool & Hot Tub Alliance
Safe Kids Worldwide
Scouting America
U.S. Coast Guard
U.S. Consumer Product Safety Commission
U.S. Army Corps of Engineers
United States Lifesaving Association
United States Swim School Association
USA Swimming Foundation
YMCA of the USA

*Interested in sampling Scouting aquatics programs as a family? Check out the **Family Adventure Camp** opportunities at the Summit and the Sea Base.* https://www.scouting.org/outdoor-programs/family-adventure-camp/

Age Appropriate Guidelines for Aquatics

AGE APPROPRIATE GUIDELINES FOR SCOUTING ACTIVITIES Age- and rank- appropriate guidelines have been developed based on many factors. When planning activities outside of program materials or handbooks, ask this question: Is the activity appropriate for the age and for Scouting? Not every activity needs to be conducted.	LIONS (WITH ADULT PARTNER)	TIGERS (WITH ADULT PARTNER)	WOLF / BEAR SCOUTS	WEBELOS ARROW OF LIGHT	SCOUTS BSA	OLDER SCOUTS BSA SEA SCOUTS VENTURERS COMPLETED 8TH GRADE OR 14 +
Aquatics (See Safe Swim Defense & Safety Afloat for restrictions based on skills rather than age.)						
Aerial Towed Activities (kitesurfing, parasailing, etc.)	Not Authorized					
Cliff Jumping, High Dives	Not Authorized					
Triathlon: Swim Races in Open Water						Sanctioned Events
Paddle Sports: Youth Operated, Class III Whitewater						✓
Personal Water Craft (PWC)					Approved Council Programs	
Paddle Sports: Whitewater Raft with Guide on Board					✓	✓
Paddle Sports: Youth Operated Class I or II					✓	✓
Motorboats: Youth Operated (check state codes)					✓	✓
Overnight Cruise on Live-Aboard Vessel					✓	✓
Sailboats & Sailboards: Youth Operated					✓	✓
Snorkeling in Open Water					✓	✓
Scuba					✓	✓
Surfing					✓	✓
Towed Activities (waterskiing, wakeboarding, floats)					✓	✓
Tubing (floating on gently flowing water)			✓	✓	✓	✓
Paddle Sports: Calm or Gentle Flowing Water	Passengers Only		Paddle Sports include Canoes, Kayaks, Pedal Boats, Rafts, Rowboats, SUP			
Commercial Marine Transport (ferries, excursion ships)	✓	✓	✓	✓	✓	✓
Day Rides, Large Private Craft: Trained Adult Operator	✓	✓	✓	✓	✓	✓
Swimming	✓	✓	✓	✓	✓	✓
Snorkeling in Confined Water	✓	✓	✓	✓	✓	✓
Water Parks, Slides, and Floating Attractions	Appropriate Age Varies by Feature					

Click **HERE** for complete chart showing activities other than aquatics.






Prohibited and Unauthorized Activities

This chapter highlights numerous aquatics activities that are part of the Scouting program. The rest of the manual covers how to safely and effectively manage such opportunities. However, there are some activities not compatible with the Scouting program. Some have unacceptable risks. Others are not consistent with the Scout Oath and Scout Law.

The Guide to Safe Scouting lists specific activities that are strictly prohibited. Several involving aquatics are summarized below and then addressed elsewhere in this manual. The list is not comprehensive. No organization can anticipate every possible activity that might be considered as part of a unit, district, or council event. For any planned aquatics activity, leaders should determine if it complies with Safe Swim Defense and Safety Afloat policies during a Scouting America **SAFE** assessment.

All activities pictured on this page are prohibited, including:

breath holding competitions;

water walking orbs;

unit level PWCs;

cliff diving; cliff jumping;
or any elevated entry from excessive heights

Class V or above rapids (extreme aspects of any sport are questionable);

parasailing; kite surfing;

flyboarding; flying tubes; or
any activity in which a person is carried aloft, including aerobatics while skiing or wakeboarding.

Resources

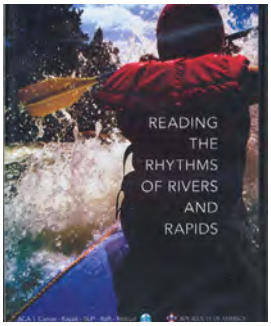
Check with your council service center or online at www.scoutshop.org for printed materials and patches. There is extensive material on all aspects of Scouting available from the Scouting America website www.scouting.org.

Aquatics information is found mainly under the OUTDOOR PROGRAMS tab in the selection bar. Important safety information is found under the SCOUTING SAFELY tab. Access to online training for Safe Swim Defense and Safety Afloat is found via the MY.SCOUTING icon.

Rather than navigate through the numerous web pages, it is often easier to use an internet search engine for the item you want, for example, typing in "Guide to Safe Scouting" will often provide a direct link.

A few links and QR codes for select items are provided below.

Remote Area Setup Video



Rivers and Rapids Video

Kayaking Video

Canoeing Video

Guide to Safe Scouting

SCOUT LIFE GUARD: A century of swim protection training

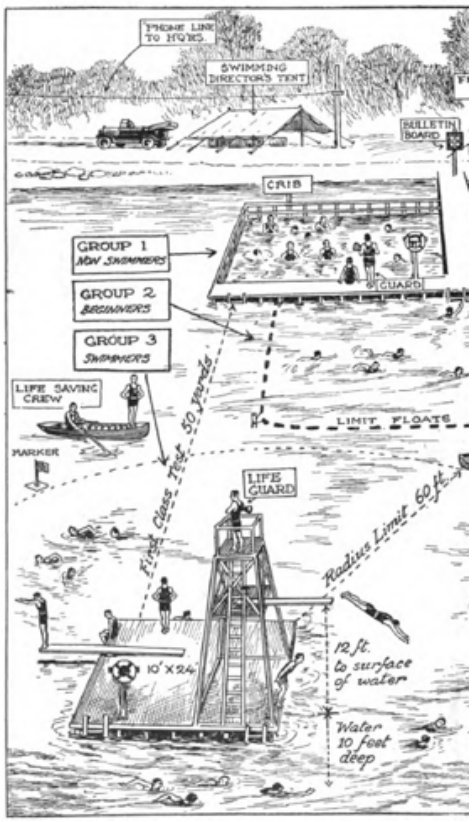
1924 - 1939

1940-1969

1970- 1978

1979- 2024

The original purpose of Scout Life Guard, later Scout Lifeguard, and then BSA Lifeguard, was to provide troops and councils with trained auxiliary personnel to supplement paid and volunteer experts providing protection and instruction for Scout swimming and boating activities during unit events and council camps. The 1924 goal was for each patrol to have one or more youth so trained, or at least two per troop. Completion of American Red Cross Junior or Senior Lifesaving , or Lifesaving merit badge, was a prerequisite. Additional requirements included a long-distance swim; proficiency in rowing technique and rescue; timed, accurate use of a ring buoy; organization of a lost swimmer search; resuscitation; and knowledge of swimmer protection, including swim classifications, use of the buddy system, and lifeguard placement and duties. Each candidate was also trained in basic learn-to-swim instruction and had to instruct fellow Scouts in swimming, lifesaving, rowing, or canoeing skills sufficient to qualify for associated awards. Those requirements were tweaked throughout the years, particularly in terms of in-water rescue procedures, and the addition of supervised intern service as a lifeguard. In 1990, the teaching requirement was dropped and completion of Swimming, Lifesaving, Rowing, Canoeing, and First Aid merit badges became prerequisites. Other changes followed, culminating in the 2009 shift from protection for unit activities to professional lifeguard training to meet regulatory requirements for council camp lifeguards. However, evolving standards for tracking instructor training and performance made it impractical for Scouting America to maintain its own professional lifeguard program, particularly when quality programs are available from other agencies. BSA Lifeguard was retired at the end of 2024.



graphics from 1924 and 1967 precursors to this manual

Chapter 3

Safety First

Simple tasks can become risky if basic safety precautions are ignored, and apparently dangerous activities can be done with minimal risk with proper planning and safeguards. For any activity, several items foster safety. A review of common causes of accidents is a good place to start. With that knowledge, rules and procedures can then be established to avoid risky situations. Prevention is the first and most important safety consideration. Contingency plans are also important if an emergency does arise. Both are covered by the key components of Scouting America's **SAFE** checklist and expanded in Safe Swim Defense and Safety Afloat plans.

SUPERVISION ensures that adults are adequately trained, experienced, and skilled to lead the activity and provides the discipline necessary to ensure compliance with rules and procedures. **A**SSESSMENT establishes program standards prior to the activity, including the training, resources, and experience to meet those standards. **F**ITNESS AND SKILL confirm that participants' health and skills are appropriate for the activity and that any skill training during the activity is suitably conducted. **E**QUIPMENT AND ENVIRONMENT ensure that activity equipment is properly sized, in good working order, and used appropriately. The activity area is checked as suitable during the assessment, confirmed as appropriate at the beginning of the activity, and monitored, along with the weather, for changing conditions throughout the activity.

Prompt recognition of a developing crisis is a nontrivial task that requires conscientious effort and a plan for adequate surveillance of everyone in the activity. The buddy system is used in Scouting to provide one-on-one observation to augment the scrutiny provided by the unit leader and rescue personnel. Appropriate response to an emergency is easier when a prearranged emergency action plan is implemented by those trained in the process.

The rest of this section will review common causes of drowning, introduce the basic elements of Safe Swim Defense and Safety Afloat procedures for drowning prevention, and outline the general elements of an emergency action plan for swimming and boating activities. Subsequent chapters will expand on rules and procedures, surveillance, emergency action plans, and rescue skills for specific activities at various sites. Should an emergency arise, water rescue is relatively safe and simple when care is taken to operate in a safe setting with appropriate rescue aids at hand. Even so, situations in which rescue skills are needed should be extremely rare. The overall safety of an aquatics activity or facility should be judged by the absence of crisis and rescue. If rescues are commonplace, inadequate precautions have been taken to ensure the highest safety standards, even if all the rescues are successful.

Millions of Scouts and millions more in the general public enjoy water sports year-round without any adverse experience. Water and people mix well when simple precautions are taken. However, not everyone realizes the need for such precautions. Each year, several thousand people die from drowning in the United States. Thousands more are taken to emergency rooms due to water-related incidents, and not all of those people completely recover. Many others are saved from injury by alert lifeguards or other rescuers.

"*Drowning is an unlovely thing.*" - Wilbert Longfellow

early Scout water safety consultant and later head of American Red Cross water safety program.

Two unfortunate tragedies dramatically illustrate how the public at large sometimes underestimates the danger in a seemingly benign situation.

A mother arranged to chaperone a group of teenaged girls at an overnight stay at a hotel as a treat for her daughter's birthday. While the group was using the hotel pool, the daughter, who could not swim, moved into water over her head. The mother noticed the daughter acting strangely and jumped into the water when the daughter did not respond to her calls. The mother, as her feet hit the bottom, managed to push her daughter a short distance to the side, where the other girls helped her out. With all their attention focused on the daughter, no one noticed that the mother, also a nonswimmer, could not move herself the short distance to safety. The mother fatally drowned, unable to call for help.

Two well-meaning and conscientious adults took a newly formed youth group on an overnight campout. The campsite was near a small, slow-moving river, and the group waded into the water from a shallow sandbar. Two boys, who could not swim, stepped off the sandbar into the channel where the water was over their heads. They did not call out for help, submerged, and fatally drowned without anyone realizing they were in trouble.

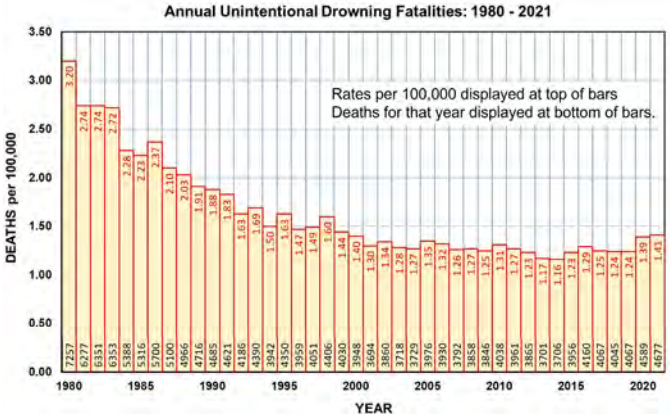
Both incidents illustrate a common drowning response. True nonswimmers—that is, those who have never supported themselves in deep water—are often in danger as soon as they enter depths where they cannot stand to breathe. Such persons, from toddlers through adults, are unable to call for help and unable to move even a few feet to safety, whether safety is a pool side, the other side of a drop-off, or a flotation device they fell from. To an uninformed observer, such victims may even appear to be playing in the water.

Drowning by the Numbers

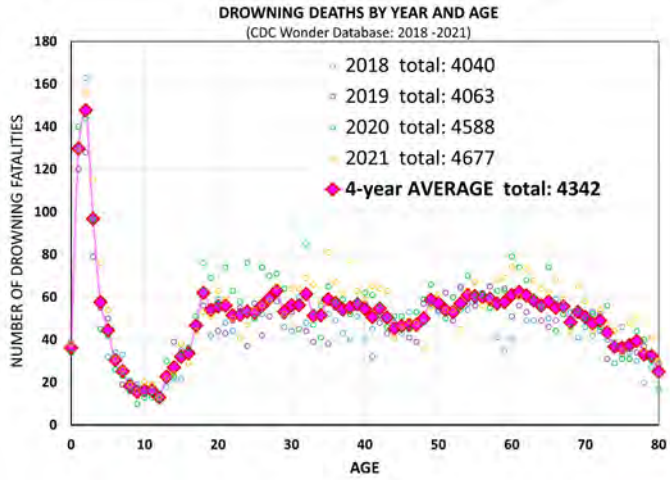
This section provides graphical displays of drowning statistics and discusses those to provide the reader with background to understand the justification for, and importance of, Scouting America water safety rules and procedures that follow.

Not all trends are illustrated. For example, it should be no surprise that drowning incidents occur more often in the summer than in the winter.

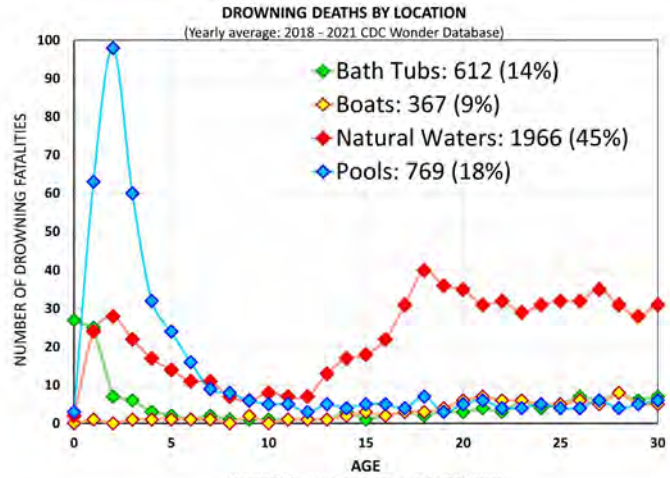
- When Scouting America was founded in 1910, the drowning rate in the US was around 9.5 per 100,000. Thanks to the efforts of the YMCA, Scouting, the American Red Cross, and others, the rate had dropped by over half to 4.2 by 1950.
- Drowning rates continued to drop until the turn of the century, but have remained relatively constant since then.



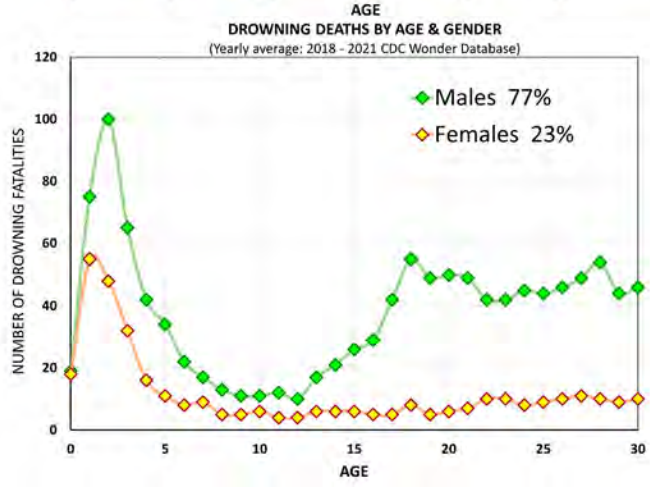
- When yearly drowning deaths are examined by age, there is a large, consistent peak for ages 1-3, a low from roughly 6 through 15, and a fairly constant frequency from 18 to 65.
- Although there are obvious trends related to age, people of all ages are at risk. 80 % of all fatal drownings occur to adults aged 18 and above.



- When location is considered, the peak for toddlers is mainly associated with drowning deaths in residential pools, with other toddler deaths occurring in natural waters and while bathing.
- After age 12, there is a significant increase in the proportion of drownings that occur in natural waters.
- There is a peak in the drowning deaths for infants while bathing which is attributed to inadequate supervision.
- However, drowning deaths while bathing persist beyond youth. Those are often associated with seizure disorders or other debilitating medical conditions.
- Boating activities account for roughly one tenth of all fatal drownings.



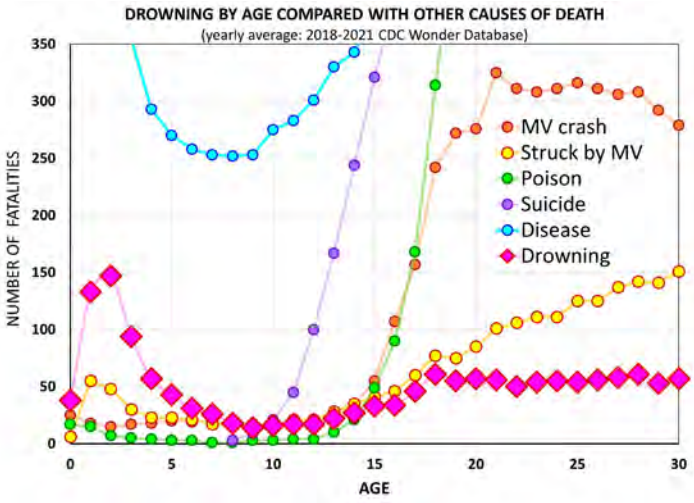
- When drowning deaths are separated between males and females, both peak at young ages.
- After roughly age 12, the drowning deaths for males increase significantly while the numbers for females hold relatively constant with increasing age
- The shape of the increase for male drowning deaths with age is similar to the increase shown for drownings in natural waters.



Drowning in Perspective

Deaths in the United States are grouped by disease and injury. For youth of Scouting age, deaths from injuries can match or exceed those from disease. For those aged 1-4, who could be involved in Scout family camping, drowning is the leading cause of unintentional injury deaths, and exceeds the number of deaths from specific diseases. For children aged 2 and 3, more than 1 in 8 of all deaths are from drowning.

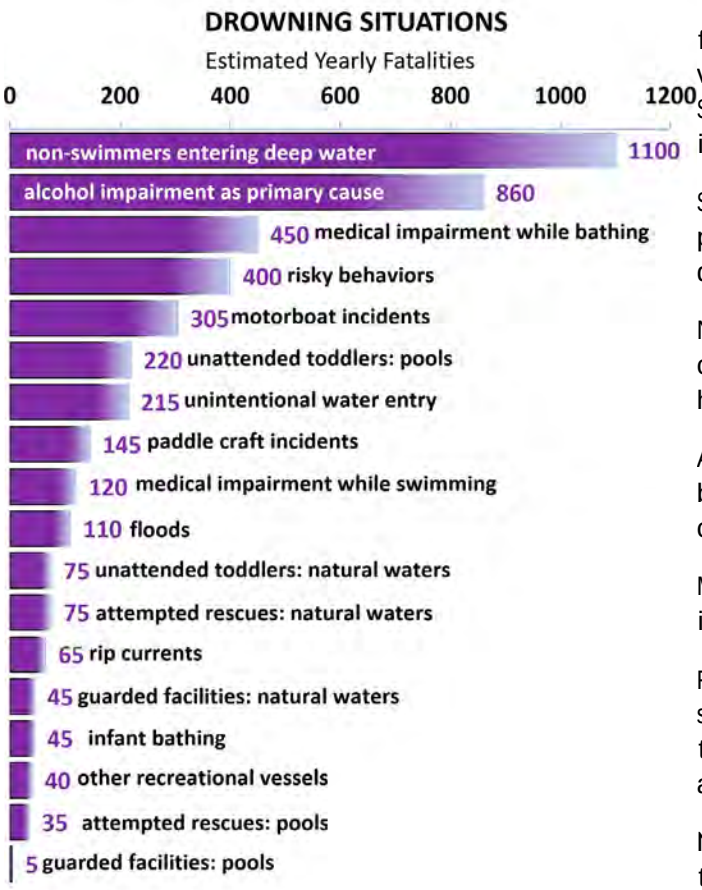
For children aged 5-14, drowning is the second leading cause of unintentional injury deaths, after motor vehicle incidents involving both crashes and pedestrians.



After teens begin to drive, deaths from motor vehicle incidents increase significantly beyond the number of drowning deaths, but those remain sizeable.

While not the focus of this manual, this chart reveals two other items of import to keeping youth of Scout age safe. The number of suicides rises markedly after age 11 for the US population as a whole. The number of deaths from poisoning, mainly from accidental drug overdose, show a similar jump upwards beginning around age 15.

Drowning Situations



The chart shows a relative comparison of various factors that contribute to drowning fatalities. The values are estimates derived from multiple sources. Several of the categories overlap, but listed numbers indicate primary cause.

Such information, combined with the statistics provided earlier, suggest ways to avoid risks and reduce drowning.

Nonswimmers entering water deeper than they can stand to breathe, whether intentionally or by happenstance, is by far the largest risk factor.

Alcohol use is involved in many fatal drowning incidents but is estimated as a primary cause in 10 to 30% of cases.

Medical impairment while both bathing and swimming is another major factor.

Risky behaviors, excluding alcohol abuse, involve several activities that are examined in more detail on the next page and are grouped under poor judgement and unsafe areas.

Note that a significant number of drownings involve those who had no intention of entering the water.

Reasons People Drown - and what to do about those

The data presented on the previous pages, combined with case studies, support the following reasons people drown. When one or more of these contributing causes of drowning are present, tragedy can result. Lack of attention to any one factor may result in inadequate regard for the others. Fortunately, informed leadership can implement procedures to minimize the risk from each factor.

- **Poor swimming skills.** Many people who drown lack the skill to swim only a few feet to safety. Knowing how to swim provides important protection against drowning. Although poor swimmers can safely participate in shallow-water or near-shore activities, a conscientious Scout leader will encourage everyone in the unit to advance at least to Scouting's "swimmer" level. Exhaustion is often cited as a factor in drownings when poor swimmers overestimate their swimming ability. A swimmer who has learned restful swimming strokes seldom has that problem.
- **Medical complications.** Drowning can result when strokes, heart attacks, diabetic reactions, or seizures occur in the water. Such conditions can cause an otherwise good swimmer to become incapacitated. Prevention relies on medical screening. Supervisors should review the health histories of all participants and physicians' recommendations. Special precautions may be needed for those with certain medical conditions.
- **Unsafe areas.** Unsafe situations for swimming and boating include swift water, submerged obstacles, ocean rip currents, high waves, and cold water. Even a simple drop-off is unsafe for a nonswimmer, which means extra precautions are needed for poor swimmers engaged in water sports. Although it is often possible to determine that an area is unsafe simply by looking, confirming that an area is safe may take an underwater search of a swimming area or advanced scouting of a river.
- **Poor judgment.** Often, the skill of those taking part influences the safety of an area or activity. However, skills are only part of water competency. Water smarts are also critical. Participation in an unsafe activity often reflects a lack of knowledge or judgment. Examples include overestimating swimming or boating skill, failing to wear a life jacket, diving into shallow water, and alcohol or other drug abuse. Education is one key to prevention. Rule enforcement, through persuasion and discipline, is another. Risk aversion varies, particularly with age. Not everyone who is aware of a risk will avoid it.
- **Inadequate supervision.** A toddler left unattended near a pool is an example of inadequate supervision. Allowing youth groups to engage in unsafe activities is another. Prompting adult leaders to review their training and skills to lead activities is provided by the first point in both Scouting America's Safe Swim Defense and Safety Afloat.

Accident Prevention: Elements of Safe Swim Defense and Safety Afloat

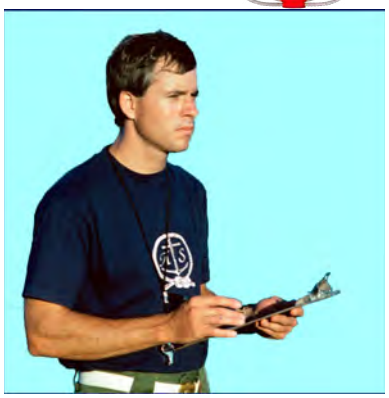
Each of the above factors contributing to drowning is specifically covered by elements of the Safe Swim Defense and Safety Afloat plans. The primary emphasis of each plan is prevention. **Qualified supervision** and **discipline** guard against unsafe activities and ensure that each point is properly implemented. A **personal health review** addresses medical complications. **Ability groups**, **swimming ability**, and **skill proficiency** match activities, areas, and equipment to abilities. **Safe swimming area, equipment**, including **life jackets**, and **planning** concern safe physical arrangements.

Each plan covers preparation, including recognition and response, should an accident occur. The **buddy system**, **lookouts**, and **response personnel** provide eyes and ears alert for trouble and ensure that someone is available to provide safe and effective assistance. They are integral parts of emergency action plans.

Safe Swim Defense and Safety Afloat are the backbones of safe unit swimming and boating activities. They define standard operating procedures for Scout water sports and the standard of care expected of unit leadership. Aquatic activities that fail to comply with either are listed as prohibited activities in the *Guide to Safe Scouting*. The points are introduced here to show their close relationship to factors that lead to drowning. However, a simple listing does not provide sufficient information to actually implement the procedures. Each item will be fully explained in subsequent chapters. Online training is provided at my.scouting.org.

Safe Swim Defense

(summary only - details in *Guide to Safe Scouting*)



Qualified Supervision

At least one adult, trained in Safe Swim Defense: responsible, informed, knowledgeable in accident prevention, and prepared for emergencies.

Personal Health Review

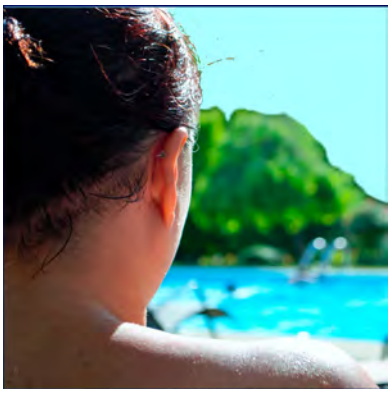
Review *Annual Health and Medical Record*, check for recent illness or injury, adjust activities to anticipate potential risks associated with health conditions.

Safe Area

Check water for depths, obstructions, quality, temperature, movement, and clarity.

Response Personnel

Assign and coach trained rescue team to recognize and respond to emergencies. Lifeguards at public venues satisfy this need

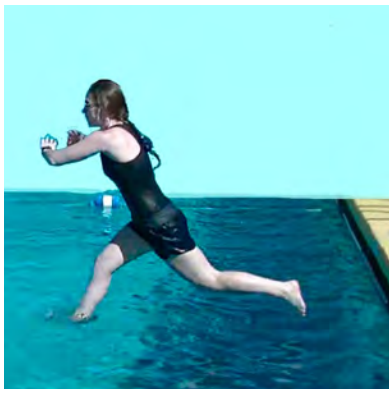


Lookout

Identifies any departure from policy and monitors weather and environment. The lookout, qualified supervisor, and response personnel act together as a safety team.

Ability Groups

All participants tested as *Nonswimmers, Beginners*, or *Swimmers* and assigned water depths consistent with ability.



Buddy System

Every participant paired with another. Buddies monitor each other and alert safety team as needed. Buddy checks conducted to reinforce that responsibility.

Discipline

All participants should know, understand, and respect rules and procedures for safe swimming, which are imposed consistently and fairly by the safety team. Rules should be discussed prior to the outing and reviewed just before the activity begins.

Safety Afloat

(summary only - details in *Guide to Safe Scouting*)

Qualified Supervision

Adults, trained in Safety Afloat, skilled in safe operation of the craft, knowledgeable in accident prevention, and prepared for emergencies.

Personal Health Review

Review *Annual Health and Medical Record*, check for recent illness or injury, adjust activities to anticipate potential risks associated with health conditions.

Swimming Ability

Independent operation of craft limited to youth and adults who have completed *Swimmer* classification.

Life Jackets

Properly fitted, approved life jackets worn by all participants in small recreational craft

Buddy System

Every participant paired with another and always aware of the other's situation.

Skill Proficiency

Everyone must have sufficient knowledge and skill to participate safely. Appropriate training varies with type of craft and water conditions.

Planning

Includes Preparation, Float Plan, Notification, Weather, and Contingencies.

Equipment

All craft and gear must meet regulations, be properly sized, and in good condition.

Discipline

All participants should know, understand, and respect rules and procedures for safe boating. Rules should be discussed prior to the outing and reviewed just before the activity begins.

Risk Management

Safe Swim Defense and Safety Afloat guidelines give the conscientious unit leader tools to prevent emergencies specific to aquatics activities. In effect, they are well-established risk management guidelines, which, if followed, should reassure the unit leader that the group is prepared for safe enjoyment of the aquatic world.

To some degree, the extent to which Safe Swim Defense and Safety Afloat guidelines manage risk depends on the willingness of each person in the group to take an active role. Scouting encourages youth to take responsibility for their behavior and safety. Ideally, all participants should feel concern and accountability for the safety of their buddy. A leader who empowers group members with resources, training, and responsibilities will often find that they can be trusted to do their own part to manage risks. If Scouts understand the rationale behind each point of Safety Afloat and Safe Swim Defense, they are more likely to comply.

'An injury that doesn't happen needs no treatment. An emergency that doesn't occur requires no response.'

—Chapter 11, "Emergency Preparedness," in the 2014 Scout Fieldbook.

However, the ultimate responsibility for risk management rests with the adult leader. Lions can easily become caught in the excitement of a moment, completely forget the rules, and become oblivious to their surroundings, without being at all intentionally disrespectful or irresponsible. Teenagers are generally more aware of circumstances about them, but the teen brain is still in development and may not perceive risk the same as an adult mind. Part of risk management on any youth outing is understanding how to guide youth of a certain age toward desired behaviors. A list of rules will not instill that capability. However, the leader who has that skill can apply it to unfamiliar activities. As an aid, the chart at the end of Chapter 2 presents age-appropriate guidelines for aquatics activities.

A leader's responsibilities seldom begin and end when a Scout enters and exits a swimming area. Swimming and boating are normally components of a unit outing, whether part of a den meeting or an extended wilderness trip by a Venturing crew. As an aquatics event moves farther from an emergency medical service (EMS) system, and Scouts become dependent on the food and gear they carry into the back country, unit leaders need to consider risk management of situations that will not be covered in this text, such as shelter, food preparation, sanitation, and dangerous wildlife. Other training materials provided by Scouting America should fill those gaps. The Fieldbook quoted above can help with outdoor adventure planning.

Although risks can be managed, they are seldom completely eliminated. Therefore, the prepared leader always has an emergency response plan and the skills and materials to implement it. Preparedness requires preparation. The next section will introduce generic components of emergency response plans, and other sections will provide details specific to swimming and boating.

However, the text may not cover some fundamental items, such as first aid skills, that apply to all unit activities whether in the water or on dry land. It is highly recommended that an adult is present at all unit gatherings who is trained in standard first aid and CPR. In urban settings, unit leaders should know the approximate response time and how to contact emergency medical services. For back country trips, where communication is more difficult and response delayed, leaders may wish to consider courses in American Red Cross Wilderness First Aid and Wilderness First Responder.

Emergency Response Plans

In 1908, Baden-Powell, founder of the Scouting movement, offered the following observation on being prepared for an accident:

> **Be prepared to do that thing the moment the accident does occur. I will explain to you what ought to be done in the different kinds of accidents, and you must practice them as much as possible. But, the great thing for you Scouts to bear in mind is that wherever you are, and whatever you are doing, you should think to yourself: "What accident is likely to occur here?" and "What is my duty if it does?"**

That statement is still excellent advice for anyone charged with supervising an activity. The first sentence means you have planned for emergencies. The second suggests you are trained in how to respond and that you keep your skills current through practice. The third means you are conscientious and continually on the alert. Perhaps you become a little on edge about how you and your group would respond to the scenarios you are running through your mind as conditions change and the activity progresses. If you aren't comfortable with the answers to the questions, you take immediate steps to reduce risk and improve preparedness.

Skilled planners "live" the experience in advance by thinking their way through every detail of an activity and likely emergency situation. Key skills, such as rescue techniques, are practiced. Equipment is tested; for example, you check that a cell phone has a signal. Drills are conducted to ensure that everyone in the unit understands their responsibility. Such preparation helps eliminate surprises. If an emergency occurs, uncertainty, confusion, and panic are ideally replaced by self-confidence and prompt and appropriate action.

Emergencies confronting a unit leader during a unit swim or trip afloat may be either major or minor. Generally, minor emergencies are more likely but easier to deal with. Minor emergencies during aquatics activities include simple first aid cases, misuse of equipment, scuffles, approaching inclement weather, and capsize in calm, warm water. Major emergencies include cardiac arrest, spinal injury, drowning, and boaters pinned by current. Major emergencies, though rare, may require focused planning to handle well. Keys to proper response are foresight, recognition, coordination, and practice.

Emergency action plans should exist for all Scouting activities, not just aquatics. They are not always long and complicated, even for major emergencies. For a backyard swim, they may be very simple and require only a short discussion or review just before the activity. For a heart attack at a backyard pool, a trained adult starts CPR while another person dials 9-1-1, opens the side gate, and waits out front to direct EMS when they arrive. Other adults or youth leaders check the status of the rest of the participants and move them from the area. For a spinal injury, a trained adult provides in-line stabilization and waits in the water for paramedics to arrive.

Emergency action plans for those or other life-threatening emergencies on a wilderness canoe trip will require more extensive planning and coordination. EMS may take a long time to arrive and may not be able to access the location of the incident. Plans should be reviewed with all the adults and senior youth leaders on the trip, and some items may need practice before the outing.

Although various templates exist for writing emergency action plans, a generic form may not capture critical items for all situations. This section offers guidance rather than a one-size-fits all prescription.

The first step in formulating an emergency action plan is to assess the various risks that should be covered. Some items, such as a small cut or a superficial burn, can be grouped together under a general first aid heading. Serious emergencies will generally share a common communication procedure and evacuation plan. Some situations, such as what to do if someone is caught in a hydraulic, may stand alone.

Each emergency response plan should address the following basics:

- When and how the plan is activated
- Who takes charge of the overall response
- Who conducts the rescue or provides aid to the victim
- What equipment will be needed, and where it is
- Communication between victim and rescuer
- Communication with and supervision of the rest of the unit members, who may assist with the effort or need to be removed from danger
- Who summons EMS, law enforcement, or other authorities, under what circumstances, and how
- After the victim is stabilized or removed from immediate danger, what follow-up care is needed, including (if necessary) how to evacuate the person or the entire unit

Details will be provided in subsequent discussions of specific activities and locations. There is one additional item to be discussed here:

- Notification of parents and council office as appropriate

Whenever a person loses consciousness or needs medical care beyond simple first aid, such as transport by EMS to a hospital emergency room, or cannot be found after a quick search, leaders should immediately notify the parent or other person designated in advance as an emergency contact. The emergency action plan should include such a contact list.

Unit leaders are also responsible for informing their council office as soon as possible. The Scout Executive or designee will provide trained help with notification of next of kin, dealing with the press, counseling for others in the unit, and insurance claims. The council office should also complete and file a timely incident report with the National office.

Youth Protection

Scouting America places the greatest importance on creating the most secure environment possible for our youth members. To maintain such an environment, Scouting has implemented mandatory Youth Protection training for all registered volunteers. Please visit scouting.org for Scouting's Barriers to Abuse and other important resources.

Even though Safe Swim Defense or other aquatics policies may designate that only one trained adult is needed to supervise the activity, Scouting's Barriers to Abuse mandate that at least one other responsible adult is present. Although that person may not be trained in water safety, they should be available help maintain discipline and to assist with implementing an emergency action plan.

The Youth Protection policies of Scouting America also address privacy and appropriate attire. Adult leaders must protect their own privacy and respect the privacy of youth members in situations such as changing into swimsuits, whether in a changing room at a public water park or at a remote campsite. Neither skinny-dipping nor revealing bathing suits are appropriate as part of Scouting.

Transportation

Since traffic accidents are a primary cause of accidental death in the United States, with the number of fatalities far exceeding those from drowning, unit members may be more at risk traveling to an aquatics area than when engaged in the activity. Scouting Amerieca has established transportation policies and guidelines to minimize such risk. The complete policies are in the Guide to Safe Scouting and should be reviewed before the unit goes on an outing. By way of review, recall that:

- Transport by commercial carriers, such as chartered buses, is recommended, particularly for large groups.
- Except in special circumstances, all drivers must be at least 18 years of age with a valid license for the type of vehicle in use, and must observe traffic regulations, including speed limits.
- All occupants of cars, vans, and trucks must wear seat belts.
- Driving time is limited to a maximum of 10 hours per day and must be interrupted by frequent rest, food, and recreation stops.
- Fatigue is a major cause of highway accidents. Don't drive while drowsy.
- All driving, except for short trips, should be done in daylight.

Highway transport of boats, by trailer or on roof carriers, requires special consideration and will be discussed further in sections on various craft.

Planning checklists

There is no national policy that requires units to file a formal tour plan with local councils. However, informed planning at the unit level is a practical concept that fosters successful, safe activities and is recognized as such in policies and procedures. There are various activity checklists available on scouting.org that may assist leaders in planning outings that include swimming or boating. For example, see the Campout Safety Checklist.

Legal Considerations

Leaders' moral obligation to protect the youth under their supervision should overshadow any concerns about legal accountability. Nevertheless, some volunteers may have concerns about legal exposure should something happen despite their diligent efforts. The best way to avoid litigation is to prevent physical or mental trauma through safety awareness, preparation, consistent application of policies, and other tools of risk management. The material reviewed here is presented as an additional aid to ensure preparedness, not as a reason to forego the pleasure, challenges, and satisfaction that arise from participating in aquatics activities.

Most legal actions that result from an accident during a supervised youth activity are civil: an injured party, or **plaintiff**, charges a person or organization, the **defendant**, with responsibility for the accident. Legal responsibility, or **liability**, is the issue, and the court may award compensation for both actual damages and as punishment (a punitive award). In a criminal case, the government charges the defendant with violating a law. The issue is guilt, which if proved, causes the court to impose punishment.

Although civil suits may be initiated under a wide variety of circumstances, the plaintiff generally must establish that harm has resulted from **negligence**, or the failure to act properly. Negligence need not be intentional or willful. It arises when the defendant fails to act appropriately, or acts improperly. Negligence can result from carelessness, poor judgment, forgetfulness, inexperience, ignorance, or failure to notice and/or correct a hazardous situation.

To establish negligence, the plaintiff must first show that the defendant had a **duty to act**. A duty to act, or duty of care, is established when a person or organization accepts responsibility for the safety of another. A parent has a duty to a child. **In loco parentis** means that another person has temporarily assumed a parent's responsibility. A person who invites a neighbor's child to play in a backyard wading pool has a duty of care, as does a Scoutmaster supervising a troop swim on a campout.

After a court determines that a duty of care exists, the next step is to determine the **standard of care** that applies to that duty. The parent watching neighborhood children in a wading pool may only be required to act as a "reasonable" or "prudent" person would under the circumstances. A bystander applying first aid at an accident scene is generally held to a lesser standard of care than an on-duty emergency room physician. Lay persons are often afforded some legal protection by Good Samaritan laws, so long as they act in accord with and within the limits of any training they have received. Note that the standard of care expected of a volunteer leader may be modified by the training and policies imposed by a sponsoring organization. For example, a plaintiff may establish negligence by showing that the actions of a Scout leader were not in accord with Scouting America policy or that they were inconsistent with how similarly trained persons would have acted.

Failure to perform the duty of care to the appropriate standard is called a **breach**. A breach by itself does not constitute negligence. Harm or damage has to result from the breach.

The following examples, some of which may fit in more than one category, may support a claim of negligence. Numerous other examples can be constructed simply by taking the inverse of any previously stated safety policy.

Failure to provide a safe environment:

- No boundary line is used between deep water and the nonswimmer area.
- Youth are provided with adult-sized life jackets.
- A tripping hazard exists where sections of a floating dock are attached.

Improper action:

- The unit leader leaves swimmers unattended.
- Youth are pressured to attempt a skills they are uncomfortable doing.
- Dangerous actions are encouraged, such as racing starts in shallow water or running a low-head dam.

Lack of action:

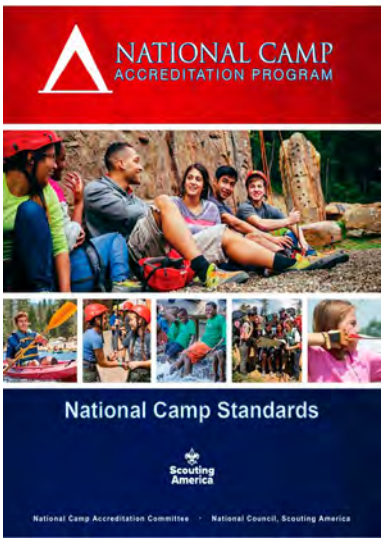
- First aid is not provided, or is stopped too soon.
- Rapids are not scouted.
- Rules are not enforced, or are enforced inconsistently.

According to **respondent superior doctrine**, an organization or employer can be held responsible for the negligence of a volunteer or employee. The Scoutmaster, the local council, and the National Council may all be named in a suit that originates from the actions of an assistant leader. While the attorneys representing the plaintiff may prefer to go after the "deep pockets" that can afford both the legal fees and the care due an injured party, lack of personal wealth does not protect any defendant from the wrath of an aggrieved parent and the indignation of a jury. Future earnings may be garnished in civil actions.

To help protect the financial resources of volunteers and employees, Scouting America provides Comprehensive General Liability Insurance for claims arising out of an official Scouting activity, which is defined as consistent with the values, Charter and Bylaws, Rules and Regulations, operations manuals, and applicable literature of Scouting America.

Many Scout volunteers also assist other organizations, such as schools, churches, and sports leagues. The prudent volunteer should realize that not all nonprofit organizations provide volunteers support at levels similar to Scouting America. Such groups may offer liability insurance coverage only to volunteers on the boards of directors.

District and Council Activities



This manual is directed primarily at volunteer leaders conducting aquatics activities at the unit level. However, those volunteers may also serve at district and council levels, and units may take advantage of programs, such as camporees and summer camps, where councils provide equipment and supervision as well as manage the property.

The standards of care for such activities are often influenced by government regulations, typically at the state level, imposed on aquatic venues and youth camps. The National Office of Scouting America provides several resources, beyond the *Guide to Safe Scouting*, to help conduct such programs and navigate the complexity of codes that may vary significantly among jurisdictions. Those include the National Camp Accreditation Program, National Camp Standards, and National Camping Schools for training key camp staff members. Additional guidance is provided by the Program Hazard Analysis tool and the Aquatics Play Structure Policy. Anyone interested in learning more should consult those resources. Ideally, questions at the local level can be addressed by a council aquatics committee, which ideally has one or more members with National Camping School training as a Scouting America Aquatics Instructor.

An example of how regulations influence standards of care is the need for professionally trained lifeguards to watch swimmers. Private, backyard pools are consistently exempt. A few cities and counties require lifeguards at hotel pools but most simply require isolation fencing, signage, and a limited depth range. Most states require public pools, such as those at state parks, to have lifeguards, but may or may not require lifeguards at designated swim areas at a lake in other parks. Enough states require lifeguards for swimming areas in youth camps to establish that as an "industry standard" for both pools and swim beaches. So, Safe Swim Defense requires "Response Personnel" for a unit backyard swim, while Scouting America National Camp Standards require professionally trained lifeguards at council camps serving multiple units.

Water Safety Advice for Parents

Scouting's safety polices and procedures focus on the age groups in Scouting programs, from kindergarten to adulthood. However, drowning data reveal that toddlers experience a high risk of death from drowning. Since Scout age youth often have younger siblings, it is important for families to be aware of drowning prevention strategies for their younger members who lack the understanding to look out for themselves. Close, constant supervision is extremely important any time toddlers are allowed in or near bodies of water. Since toddlers are mobile and prone to explore, restricted access to water is also vital.

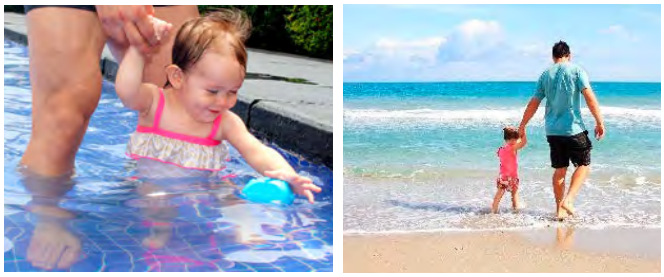
Water Watchers

Water Safety USA recommends designating a "Water Watcher" whenever children are in the water. For toddlers, the water watcher should provide "touch supervision", that is, be within arms reach at all times. The water watcher should pay constant, undistracted attention and not be involved in any other activity such as cooking, talking on the phone, or reading.

An appropriate water watcher:

- Is at least 16 years of age (adults preferred).
- Has the skills, knowledge, and ability to recognize and rescue someone in distress or can immediately alert someone nearby who has that capability.
- Knows CPR or can quickly summon someone with that skill.
- Has a working phone to dial 9-1-1.
- Has a flotation or reaching device for rescues.
- Is alert and not influenced by drugs or alcohol.

Non-swimmers should be kept away from deep water. Properly fitted Coast Guard approved life jackets are appropriate in some situations. Never rely on "floaties" or other toys for non-swimmer protection.



Keep young children within arm's reach.

Do NOT rely on inflated devices or other floats to protect nonswimmers.

Pool Barriers

Parents owning or visiting residential pools should address the risk when toddlers have unsupervised access to the water. Pool barriers, such as surrounding fences with self closing and locking gates, are highly recommended and mandated by statue in many areas. Studies confirm that such codes reduce drowning rates. If the house itself forms part the barrier, then doors and windows to the pool area should be locked and alarmed. See the US Consumer Product Safety Commission's Pool Safety website for details.

Secure pool barriers save lives!

Chapter 4

Health Considerations

Reviewing Required Medical Information

Both Safe Swim Defense for swimming and Safety Afloat for boating require the unit leader to assess whether there are any health conditions that require special consideration:

> A complete health history is required of all participants as evidence of fitness for swimming and boating activities. Forms for minors must be signed by a parent or legal guardian. Participants should be asked to relate any recent incidents of illness or injury just prior to the activity. Supervision and protection should be adjusted to anticipate any potential risks associated with individual health conditions. For significant health conditions, the adult supervisor should require an examination by a physician and consult the parent, guardian, or caregiver for appropriate precautions.

The Scouting America has established minimum standards for providing medical information before participation in various activities. The type of information required depends on the duration, location, and rigor of the event. Forms are available from at www.scouting.org. Only those forms may be used for Scouting activities. Participants who need a separate form for school or sports events are encouraged to have both forms completed during the same visit to their health care provider.

Scouting America's Annual Health and Medical Record (AHMR) consists of three parts with a supplement for high adventure. Part A is an informed consent, release agreement, and authorization that needs to be signed by every participant (or a parent and/or legal guardian for all youth under 18). Part B covers general information and health history. Parts A and B are to be completed at least annually by participants in all Scouting events.

Part C is a pre-participation physical certification to be completed and signed by a certified and licensed health-care provider—physician (MD or DO), nurse practitioner, or physician assistant. Scouting America recommends that everyone who participates in a Scouting event have an annual medical evaluation. However, Part C is only required for events that exceed 72 consecutive hours, for high-adventure base programs, or for activities that are strenuous and demanding.

The height/weight limits in Part C may limit participation in events that will take the unit more than 30 minutes away from an emergency vehicle–accessible roadway.

Each national high-adventure base has provided a supplemental risk advisory that explains in greater detail some of the risks inherent in those programs. All high-adventure participants must read and share that information with their medical providers during their pre-participation physicals.

Medical information for scuba divers at the National High Adventure Sea Base includes a diver questionnaire and guidelines for health care providers. Scouts working on the Open Water Diver Certification requirement for the Scuba Diving merit badge will be subject to a similar medical review process by the agency conducting their training.

HIPAA

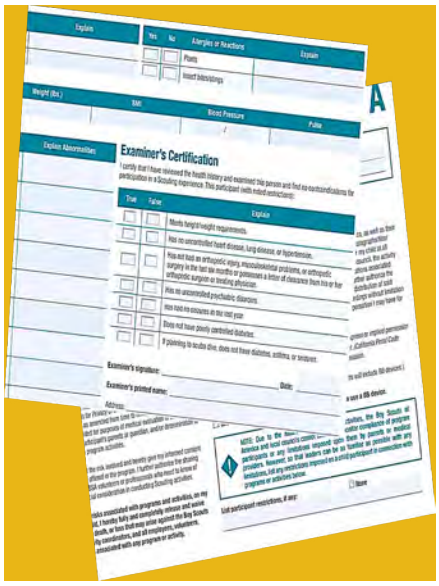
The Health Insurance Portability and Accountability Act does not apply to Scouting volunteers who do not receive payment for medical treatment. However, all units should take reasonable steps to maintain confidentiality of medical histories, birth dates, and other personal information.

The unit leader should carry copies of participant AHMRs on remote trips so that important information, such as drug allergies and contact numbers, will be readily available if professional treatment is needed.

The adult supervisor should review the health history of every participant, youth and adult, for swimming or boating activities and respect any recommendations of the physician or other person licensed by the state to perform physical examinations. Some medications increase sensitivity to the sun. Individuals with severe allergic reactions to insects and marine life will need immediate access to self-administered medication. Certain chronic conditions such as epilepsy, asthma, or diabetes may require special precautions. For example, a person with seizures controlled by medication may be able to participate in normal swimming activities in a pool when accompanied by a buddy familiar with the situation, but be required to wear a flotation device when engaged in an open-water snorkeling exercise. The unit leader should discuss such situations with parents or guardians and respect the privacy and the dignity of the person involved. Medical information should be requested only when safety is an issue, and shared only with permission with those who need to know.

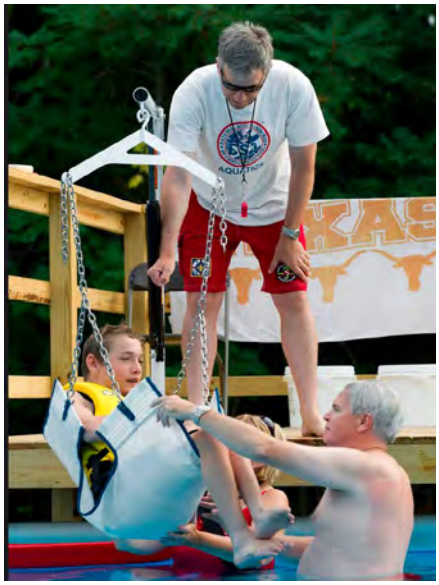
The most common medical conditions that require restricted water contact are temporary and may not be noted on a health history completed before the condition arose. Those include ear infections, healing wounds, eye irritations, and rashes. Since such conditions are not always visible, the adult supervisor should ask parents about any recent medical problems just before the outing. Such a question can be combined with standard permission slips that inform parents of the nature of the activity and allow emergency medical treatment for a youth in case of injury or illness when a guardian cannot be contacted.

Aquatics activities often offer unique opportunities for those with physical or learning disabilities. Any youth who is able to join in unit activities on land can probably also join in unit swimming and boating activities. Special precautions may be needed for those with impaired mobility, sight, or hearing. Check with the participant and his or her caregivers on appropriate safeguards and activities.



Check medical forms for any conditions that necessitate special precautions. If in doubt, check with parents.

Don't forget to check for recent illness or injury not noted on your forms.



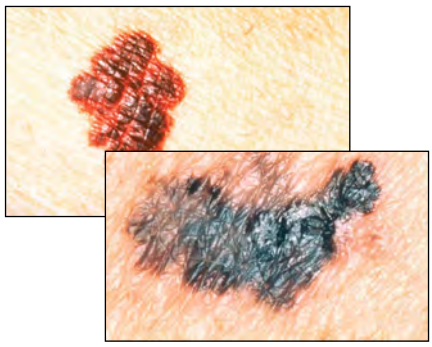
Work with unit members, parents, and caregivers to provide safe and fun aquatics activities for everyone in the unit.

Some conditions may require prompt treatment with medications. Arrange for easy access for those in or on the water. Know how to assist the person if needed.

Health Protection

The supervisor of an aquatics activity needs to be alert for health concerns that may occur during an activity.

Sun Protection. Youth may regard a minor sunburn as a badge proclaiming their outdoor adventure and the first step to a summer tan. However, exposure to the sun should be carefully monitored. Only a short time in the sun can lead to a painful burn that will spoil the rest of the trip. Also, skin damage caused by the sun during the first 18 years of life is a major cause of skin cancer as an adult. Insist that participants use sunscreen as appropriate. Pink skin that turns pale with touch is a sign of too much exposure and a signal to either cover the skin with opaque clothing or limit activities to the shade.



Waiting until a sunburn appears means you have waited too long to protect your skin. Sun exposure while young can lead to life-threatening conditions when older. Check with a physician about suspicious skin features.

Sunscreen with an SPF rating of at least 30, with both UVA and UVB blockers, should be applied before exposure and reapplied after sweating or swimming even if the product claims to be waterproof. Although sunscreen will prolong the safe exposure time, the period of protection is limited no matter how high the SPF number. A white T-shirt will provide some but not complete protection, particularly if the shirt is wet.

Bright sunlight can also damage the eyes. A hat with a bill that shades the eyes is useful, and sunglasses with UV protection help protect against glare off the water. Polarized glasses are recommended because reduction of glare offers eye protection and makes it easier to observe activity on or beneath the surface.

Heat Reactions. Exercise in high temperatures and humidity can lead to dehydration, heat exhaustion, and heatstroke. Avoid such consequences by making sure that all participants have ready access to drinking water. Drinking when thirsty should prevent dehydration. Eating regular meals will help prevent electrolyte imbalance that may lead to cramps. Anyone beginning to feel dizzy, faint, nauseated, or weak should rest in the shade.

Cold Reactions. Too little heat is as dangerous as too much heat. Even when the air is warm, exposure to cool or cold water can quickly remove heat from the body. Watch all participants for early signs of heat loss such as shivering, goose bumps, and bluish lips. When those occur, get the person out of the water and wind and into dry clothing. When exposure to cold water is a possibility, consider the use of wet suits, and include treatment for hypothermia in your emergency action plan. See Chapter 15 for more information.

Hyperventilation - Hypoxic Blackout Breathing is triggered by a buildup of carbon dioxide rather than depletion of oxygen. Repeated deep and rapid breathing, or hyperventilation, before underwater swimming can result in hypoxic blackout, that is, loss of consciousness from a delayed urge to breathe. That in turns means the person will drown if not quickly rescued.

Breath-holding is an important stage in learning to swim, and the ability to swim underwater is an important skill for snorkeling and lifesaving. However, one or two deliberate breaths should be sufficient. Caution anyone obviously breathing heavier than normal before submerging. Because of concerns with hyperventilation leading to hypoxic blackout, competitive underwater swimming events are not permitted in Scouting. (Hypoxic blackout is sometimes referred to as "shallow water blackout". Water Safety USA agencies recommend not using that term since the effect has nothing to do with water depth.)

Breath-holding contests are prohibited in Scouting.

Ear Infections. Organisms in natural bodies of water can multiply when water remains in the ear canal after swimming, causing irritation and infection. Over-the-counter ear drops contain ingredients that inhibit organism growth (mild acid), help remove the water (alcohol), and prevent overdrying (glycerin). Scouts may use such preparations as a preventive measure with parental approval. Avoid homemade solutions. Don't place anything in the ear if pain is present; instead, seek medical help.

Infectious Disease. Illness may be spread via contaminated water, particularly water polluted with fecal matter. Avoid swallowing water while swimming, in either a pool or a lake. Don't swim in small stagnant bodies of water or where livestock or waterfowl are prevalent. Observe any warning signs posted by health officials. Popular beaches may be temporarily closed due to unexpected sewage release, low water, or other factors.

Water in swimming pools is actively disinfected. However, typical pool chlorine levels do not immediately kill all pathogens in water contaminated with fecal matter. If fecal matter is released in a pool—from a toddler with diarrhea, for example—cancel the swimming activity until another time.

International research indicates that children with Autism Spectrum Disorder (ASD) have an increased risk of drowning. Children with ASD are 160 times more likely to experience nonfatal and fatal drowning as their neurotypical peers. Wandering to nearby bodies of natural water is the most commonly reported activity leading to drowning. Children with ASD like the visual simulation of water, which can explain their attraction to it. However, they may not realize the danger that water poses. Even if a child with ASD learns how to swim, it is sometimes difficult for them to generalize those skills to other areas they may not have been before, such as a lake or river. Supervision by those aware of the link between autism and drowning is needed, as well as targeted learn-to-swim programs.

The Greatest Risk:

In good years, no one drowns at Scouting events. However, year after year, adult deaths occur during Scouting activities. The number one cause of death in Scouting and for the public at large is heart disease. Statistically, unit leaders are less likely to need to rescue a youth from drowning than they are to need aid themselves to survive cardiac arrest in, on, and near the water.

In response, Scouting America has implemented various initiatives such as annual physicals, activity restrictions based on height/weight ratios, and CPR/AED training. Leader fitness is also a common program theme. All adults should review the risk factors for heart disease and do what they can to mitigate those risks, particularly through exercise and a heart-healthy diet.

Although the first obvious symptom of a problem often appears to be a fatal heart attack, nearly all patients have warning signs such as chest pains and breathlessness immediately before the attack.

During Scouting events, adult leaders need to watch out for each other as well as the youth under their care.

Chapter 5

Swim Classification Tests

Safe Swim Defense and Safety Afloat guidelines tailor activities to swimming ability. Therefore, the unit leader needs to provide opportunities for swimmer classification before aquatics outings. Swim tests conducted by council personnel during or just before summer camp give the unit one way to determine swimming ability. However, not all unit members attend camp, new members may join the unit at any time, and some units plan aquatics activities in lieu of summer camp. Therefore, the unit should be able to safely conduct its own swim tests.

Any conscientious leader, currently trained in Safe Swim Defense, who is familiar with basic swimming strokes and who understands and abides by the guidelines in this chapter can administer swim tests for the unit. Units seeking to pre-certify members who will attend council events may need to follow additional guidelines imposed by a local council committee. There is a generic form for council use in Scouting America's Aquatics Management Guide. However, local rules may vary and are dependent on state regulations for youth camp operations. Other procedures may apply to pre-certify participants for aquatics programs at national high-adventure bases.

Anyone who has not administered the swim classification tests before should review the video content for the procedure that is included in Safe Swim Defense online training.

Swimming Classifications

Scouting recognizes three basic swimming classifications: *swimmer*, *beginner*, and *nonswimmer*. Swim classification tests should be renewed annually, preferably at the beginning of the season.

Swimmer The swimmer test demonstrates the minimum level of swimming ability required for safe deepwater swimming. The various components of the test evaluate several distinct, essential skills necessary for safety in the water. A precise statement of the swimmer test is:

> **Jump feetfirst into water over the head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.**

The test administrator must objectively evaluate both the ease of the overall performance and the purpose of each test element. Any conscientious adult who is familiar with basic swimming strokes and who understands and abides by the following guidelines can administer the test.

Swim goggles may be worn by the participant. Face masks, snorkels, nose clips, hand paddles, fins, and buoyancy aids, such as life jackets, may not be used.

1. "Jump feetfirst into water over the head in depth. Level off . . ."

The swimmer must be able to make an abrupt entry into deep water and begin swimming without any aids. Walking in from shallow water, easing in from the edge or down a ladder, pushing off from the side or bottom, and gaining forward momentum by diving do not satisfy this requirement. If the swimming area available for the test is not quite over the swimmer's head in depth, or does not provide a platform for jumping into deep water, then a person may be provisionally classified as a swimmer if able to easily bob repeatedly up and down in the water, then level off and begin swimming. The head must submerge without the legs touching bottom. Ideally, the feetfirst entry should be tested at the next available opportunity.

2. ". . . swim 75 yards in a strong manner . . ."

The swimmer must be able to cover distance with a strong, confident stroke. The 75 yards is not the expected upper limit of the swimmer's ability. The distance should be covered in a manner that indicates sufficient skill and stamina for the swimmer to continue to swim for greater distances. Strokes repeatedly interrupted and restarted are not sufficient. The sidestroke, breaststroke, or any strong over-arm stroke, including the back crawl, are allowed in any combination; dog paddling and underwater strokes are not acceptable. The strokes need to be executed in a strong manner, but perfect form is not necessary. If it is apparent that the swimmer is being worn out by a poorly executed, head-up crawl, it is appropriate for the test administrator to suggest a change to a more restful stroke. A skilled, confident swimmer should be able to complete the distance with energy to spare, even if not in top physical condition. There should be little concern if a swimmer is out of breath because the distance was intentionally covered at a fast pace. However, a swimmer who barely has the energy to complete the distance will benefit from additional skill instruction.

3. ". . . swim 25 yards using an easy, resting backstroke."

The swimmer must demonstrate a restful, free-breathing backstroke that can be used to avoid exhaustion during swimming activity. It is placed at the end of the distance requirement to emphasize the use of the backstroke as a relief from exertion and may actually be used by some swimmers to catch their breath if they swam the first part more strenuously than needed. The change of stroke must be done without support from side or bottom. Any effective variation of the elementary backstroke is acceptable. The form need not be perfect. For example, a modified scissors kick may be substituted for a whip kick. Restful strokes are emphasized in Scouting as important safety skills that can be used whenever the swimmer becomes exhausted or injured. Some swimmers, particularly current or former members of competitive swim teams, may not be familiar with the elementary backstroke. A back crawl will suffice for the test if it clearly provides opportunity for the swimmer to rest and catch the breath. However, individuals successfully completing the test with the back crawl should be encouraged to learn the elementary backstroke.

4. "The 100 yards must be completed in one swim without stops and must include at least one sharp turn."

The total distance is to be covered without rest stops. It is acceptable for someone to float momentarily to work out a kink in a muscle or to tread water to avoid collision with another swimmer, but not to make up for a poorly executed stroke by repeatedly floating, grasping the side, or touching the bottom. The sharp turn demonstrates the important skill of reversing direction in deep water without support. There is no time limit for completion of the test.

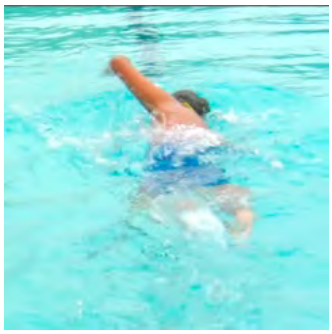
5. "After completing the swim, rest by floating."

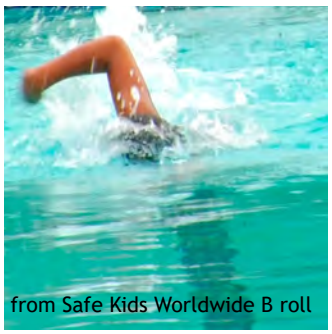
This critically important component evaluates the swimmers' ability to support themselves indefinitely in warm water when exhausted or otherwise unable to continue swimming. Vigorously treading water will tire the swimmer and is therefore unacceptable. The duration of the float is not significant, except that it should be long enough for the administrator to determine that the swimmer is in fact resting and could continue to do so. A back float with the face out of the water is preferred, but restful facedown floating is acceptable. If the test is completed except for the floating requirement, the swimmer may be immediately provided brief instruction and then retested on the floating only, provided the test administrator is confident that the swimmer can initiate the float in deep water when exhausted.

Beginner A precise statement of the beginner test is:

> Jump feetfirst into water over the head in depth, level off, and swim 25 feet on the surface. Stop, turn sharply, resume swimming and return to the starting place.

The entry and turn serve the same purpose as in the swimmer test. The swimming may be done with any surface stroke. Underwater swimming is not allowed. The stop assures that the swimmer can regain the stroke if it is interrupted. The test demonstrates that the beginner swimmer is ready to learn deepwater skills and has the minimum ability required for safe swimming in a confined area in which shallow water, sides, or other support is less than 25 feet from any point on the water.



Beginners: jump in, level off, swim 25 feet, stop, turn return for 25 feet

Nonswimmer Anyone who has not completed either the beginner or the swimmer test is classified as a nonswimmer. The title is descriptive and non judgmental. It may represent those just learning to swim who do not yet have the skills to safely venture beyond shallow water. It may also apply to those who have not yet been tested or who have elected to forego the test and to accept the limitations on activities imposed by the classification.

Both nonswimmer and beginner classifications prevent a Scout from gaining the full benefit of aquatics programming. Unit leaders should promote swimming ability to all members and strive to have everyone in the unit classified as swimmers. Such a goal increases each Scout's safety and confidence, provides more recreational and instructional opportunities, and makes it easy for units to administer their own aquatics programs. Note that the beginner test is a requirement for Scouts BSA Second Class rank, whereas the swimmer test is a requirement for First Class rank. A troop's ability to conduct swim classification tests also makes it easier to administer rank advancement.

Beginners:
- Jump into deep water.
- Swim 25 feet.
- Turn.
- Return.

Total: 50 feet with entry and turn

Swimmers:
- Jump into deep water.
- Swim 75 yards with strong forward stroke.
- Swim 25 yards with restful backstroke.
- Rest by floating.

Total: 100 yards with entry and turn

Testing Procedure

All swimming activities, including swim classification tests, follow the elements of Safe Swim Defense. The health history of each individual should be reviewed before testing. No one should be allowed in the water against the recommendations of parents, guardian, or physician. Those who are not allowed to enter the water for whatever reason do not automatically fall into the nonswimmer category. Normally, nonswimmers are encouraged to participate in aquatics activities as an incentive to improve their skills. If the aquatics activities are conducted by the unit, then the adult in charge of the event should know the difference between those classified as nonswimmers on the basis of skill, and those not allowed to swim due to a chronic or temporary physical condition that limits water contact. The unit may be asked to conduct swim classification tests before participation in a multiple-unit event, such as summer camp or jamboree. In those cases, care should be taken to preclude participation in an event as a nonswimmer by someone who should not be in the water. The unit leader should discreetly communicate such situations to the event supervisor. Youth should be privately put on their honor not to circumvent any restrictions.

Swim tests are done one-on-one, with the examiner and youth as buddies.

Participant is asked to describe test and confirm comfort with each task. If there is any hesitation, check ability first in shallow water.

Tests measure comfort in the water but do not require perfect form.

Rest stops are not allowed. However, the course should be close to the side to allow for resting and easy assists if needed.

Situations may arise when special consideration should be given to those with temporary medical conditions. For example, yearly swim classification renewals may be scheduled just before a canoe trip. A physician may approve a person with an ear infection or a sutured wound to go on the trip, but caution against submerging the head or the bandage. Since it would be difficult to administer the swim test without getting the ears or the wound wet, the adult leader might classify the Scout temporarily as a nonswimmer. That, however, would prevent the Scout from paddling in a canoe with their buddy. If the unit leader has sufficient evidence that the Scout is indeed a good swimmer—one who has earned the Lifesaving merit badge, for example, or is a member of a swim team—then an extension of the Scout's previous swimmer classification is appropriate until healing sufficiently to retake the test.

The ideal place to conduct a swim test is a swimming pool with straight stretches of 25 to 50 yards and clear water at least 7 feet deep at the point of entry. Those taking the swimmer test can then be instructed simply to swim either four or two lengths as appropriate. A pool 25 or 50 meters in length is easily adapted by placing a turning mark or line at the yard mark, or by having the person swim the short extra distance. (Recall that the swimmer test is not meant to demonstrate the maximum distance a person can swim.) The course may also be laid out such that the swimmer follows a circular pattern around the pool rather than back and forth, but be sure to incorporate the sharp turn required by both beginner and swimmer tests.

Very small backyard or apartment pools (less than roughly 20 feet in the maximum direction) are fine for a unit swim, but should be avoided as locations for swim classification tests since likely contact with the sides and bottom during all the turns makes it difficult to judge how well the person can swim. Such pools may also be too shallow to meet the criterion for a feet-first entry into water over the head in depth.

Any natural body of water that satisfies Safe Swim Defense requirements may be used for swim classification tests. Clear water is preferred over murky water; warm water over cold water. A pier that extends from shore to deep water is ideal for the feetfirst entry in the requirements, but a floating platform can also be used.

If a pool open to the public is used for testing, try to schedule a time when the pool is less crowded. Inform pool personnel of what you are doing. A guard may be willing to clear an area briefly if you have only one or two Scouts who need the test.

During swim classification tests, the swimmer and the test administrator form a buddy pair. If there is a large group needing tests, then several testers are useful. Individual testing is required. Unit members should not be aligned at each lane and started at once, as in a swim competition.

Although the tests may be explained to the unit as a whole, test administrators should briefly review the tests with each participant. Each person should be asked if they would like to first try the beginner or the swimmer test. If the person asserts the ability to easily swim 100 yards, then it is not necessary to take the beginner test before the swimmer test. If a person is hesitant, they may take the beginner test first and follow it with the swimmer test if that seems appropriate. Those who fall just short of the required distances may be given a few pointers, a rest, and another try. Those who cannot complete the tests should be congratulated on how far they got, encouraged to practice, and told that they will be able to retake the test at a later date. If a person in a swimsuit at the swimming area decides not to take either test, then they should be encouraged to slip into shallow water and show what they do know. That is, professed nonswimmers should be part of the overall unit activity, not shunted aside in the interest of time. **Everyone should be encouraged to try to swim to the best of their ability, but no one should be coerced into the water.**

Some participants may be willing to jump into water over their head even though they have never done it. Therefore, every participant should be asked if they have jumped into deep water before. If they have not, first confirm that they can swim in shallow water and then see if they are comfortable in deep water with a slide-in entry at the edge. The test may proceed once the person demonstrates comfort in deep water.

With proper screening, those taking the test should not be at risk of a bad experience. Nevertheless, test administrators should be ready and able to provide immediate assistance if the swimmer does need help, perhaps due to a cramp or exhaustion. Ideally, the course for the beginner test should be alongside a pool deck or pier so that the swimmer is always within a hand's reach or a single stroke from support. The course for the swimmer test should be within reach of a pole. The best way to keep poles ready for use is to lay them along the edge of the pool or pier. A pole is then within easy, unobtrusive access at all times. If the course incorporates a floating dock in a natural body of water, then the feetfirst entry and first few strokes should be within easy reach. If the course then extends beyond the reach of a pole, the swimmers should be either within reach of rescue personnel in a rowboat or canoe or within easy throwing distance of a ring buoy on a line or a throw bag. If a person taking the test succeeds in leveling off after the feetfirst jump, then the most likely need will be to encourage a tired swimmer to come to the side under their own power. In a few cases, a reaching assist may be needed immediately after the feetfirst entry. Test administrators should be skilled in basic rescue techniques to satisfy Safe Swim Defense guidelines for trained safety personnel. If there are others in the water not taking part in the testing, then additional response personnel (lifeguards) are needed. In either case, a lookout is required to monitor all in-water activity.

Swim Test Anxiety

Both the unit leader and the test administrator should be sensitive to those who may be fearful of the water, uncertain of their ability, worried about peer reaction, otherwise apprehensive, or simply confused about the process and what is expected of them. The unit leader should work with the test administrator to help prepare such Scouts for the swim test, particularly when it is conducted by someone the Scout is unfamiliar with, such as staff at resident camp or at a multiunit, council-organized swim test prior to camp.

The first day of a camp program may be an overwhelming experience for Scouts for many reasons—being away from home and the support systems that home provides, the thrill but uncertainty of what they will experience at camp, and perhaps thoughts of how they will measure up in comparison to their buddies. At summer camps, the swim test is often the first program activity where Scouts both interact significantly with those outside the unit and are asked to perform to a standard. That experience may produce significant anxiety for a small number of youth. However, there is no justification for fears to be realized. The unit leader can help prepare those Scouts both before and at camp so that the swim test is a positive experience. The following items should help leaders recognize and reduce anxiety about the testing process:

- Early identification. Scouts who may be anxious around the water or with the swim test process should be identified well before summer camp or other event for which the test is required. Comfort around the water should be included in the leader's discussion with parents for youth who join the unit. The leader should also talk to the youth themselves. For Cub Scouts, check to see if swimming is an interest. For Scouts BSA, comfort in the water should arise naturally during discussions of advancement requirements for Second Class, which includes the beginner test, and for First Class, which includes the swimmer test. Be sure to watch for nonverbal cues to see if their body language matches what they say.
- Year-round swimming programs. A year-round swimming program provides meaningful and fun activities and allows the leader to observe firsthand the comfort level of Scouts around the water. It also provides an opportunity to see how unit members respond to those reluctant around the water or with lesser swimming ability. For troops, it will help move Boy Scout advancement along faster. Ideally, the first time the Scout takes a swim test is during a learn-to-swim class with a familiar, trusted instructor conducting the exercise. Subsequent tests are just repeats of tasks the swimmer knows they have accomplished before.
- Consider precamp swim tests. Some councils arrange precamp swim tests for units. If that option is available, consider whether youth with swim test anxiety might perform better away from the other first-day camp activities. If allowed, reluctant members of the unit might arrive early to get adjusted to the water and take a "mock" test prior to the "real" test. (Note that the camp aquatics director may retest any Scout or leader whose skills appear inconsistent with their classification.)
- Prepare the unit for the test. The leader should familiarize Scouts with the swim test process as part of the unit's camp readiness discussions. Explain the purpose of the test and how it will be conducted. Explain that each youth's swimming ability may be different and that the better swimmers are expected to encourage and support those with lesser ability. Remind everyone that opportunities to retake the test will be provided to those who don't make it as far as they would have liked. Encourage any youth who needs to speak with the leader in private to do so. And remember that no one should be forced—whether by anyone's statement or through peer pressure—to take either test if they choose not to.
- Work with the camp aquatics director. The camp aquatics director should approach the unit leader when the unit arrives at the swimming area for orientation before the test. That is an intentional opportunity for the leader to identify any medical concerns and to discuss any youth who may be anxious about the swim test. Make sure the aquatics director assigns an empathetic, experienced staff member to work with each such youth and stay with the youth until the staff member establishes a reasonable rapport. The tests will be conducted one-on-one, so it should be possible for leaders to stagger interactions with more than one Scout. If the Scout remains anxious, the leader may request the aquatics director to arrange a special time to conduct the test for that individual when there is less activity in the area and more time for the youth to become comfortable before taking the test.

Review Questions for Section I

1.1 Unit leaders accompanying Scouts on an outing are absolved of all responsibility when a professionally trained individual leads an activity.

T F

1.2 Unit leaders need not be skilled in an activity if they are assisted by a professionally trained individual.

T F

1.3 Unit leaders conducting an activity must be experienced in the activity and able to respond appropriately in an emergency.

T F

2.1 Cub Scouts earn awards by

A. Doing their best
B. Meeting performance standards
C. Winning competitions
D. Attending required classes

2.2 Scouts BSA earn awards by

A. Doing their best
B. Meeting performance standards
C. Winning competitions
D. Attending required classes

2.3 Which of the following must a youth accomplish to advance to Eagle Scout rank?

A. *Swimmer* classification
B. Swimming merit badge
C. Lifesaving merit badge
D. All of the above

3.1 Which of the following is not an allowed activity for Cub Scouts?

A. Learn-to-swim programs
B. Snorkeling in confined area
C. Riding in a motorboat
D. Commercial trips on white water

3.2 Which of the following is not an allowed activity for Scouts BSA?

A. Snorkeling in open water
B. Cliff diving into deep, clear water
C. Canoe trips on moving water
D. Driving a motorboat

3.3 Which of the following is not an allowed Venturing activity?

A. Scuba diving in open water
B. Triathlon events
C. Commercial trips on white water
D. Parasailing

4.1 Drowning is a statistically significant cause of accidental death for 1- to 4-year-olds.

T F

4.2 Drowning follows motor vehicle accidents as the second leading cause of accidental death for Scout-aged youth.

T F

4.3 Because many people swim at public pools, most drownings occur at supervised pools even with lifeguards on duty.

T F

5.0 List three contributory factors to drowning.

1.

2.

3.

6.1 Ultimate responsibility for safety rests with the unit member, not the unit leader.

T F

6.2 If adequate preventive steps are in place, an activity can safely proceed without emergency response plans.

T F

6.3 Risks can be managed but seldom completely eliminated.

T F

7.0 List three items common to all emergency action plans.

1.

2.

3.

8.0 **Policies allow a single adult to supervise a den on a remote hike to a swimming beach provided Scouts BSA are available to serve as lifeguards.**
T F

9.1 **A tour and activity plan must be submitted for council review for all unit swimming activities.**
T F

9.2 **An emergency plan is not needed for a swimming activity at a parent's backyard pool.**
T F

10.1 **A ruling of negligence must establish that harm resulted.**
T F

10.2 **A ruling of negligence must establish the intent to harm.**
T F

10.3 **Good Samaritan laws completely protect a unit leader from charges of negligence.**
T F

11.1 **All swimming and boating activities require a current health history for every participant.**
T F

11.2 **Part C of the Annual Health and Medical Record is to be completed and signed by a certified health-care provider.**
T F

11.3 **Youth and adults require a medical evaluation within the previous 12 months for any event exceeding 72 hours.**
T F

12.1 **Which is the more common medical condition that will limit access to the water?**
A. Cardiovascular disease
B. Use of medication to control seizures
C. Ear infection
D. Allergy to jellyfish venom

12.2 **Which of the following mandates exclusion from the water?**
A. Cystic fibrosis
B. Use of medication to control seizures
C. A parent's or physician's instruction on the medical form
D. All of the above

12.3 **Which of the following may require additional safety measures while swimming?**
A. Epilepsy
B. Asthma
C. Diabetes
D. All of the above

13.1 **Special precautions for those with chronic or temporary medical conditions are based on**
A. Consultation with the parents
B. A physician's written recommendations
C. Instructions from a caregiver accompanying the individual
D. All of the above

13.2 **Competitive breath-holding events are not allowed due to concerns with**
A. Hyperventilation
B. Hyperthermia
C. Hypothermia
D. Ear infections

13.3 **Which of the following is not a symptom of the early stages of hypothermia?**
A. Shivering
B. Goose bumps
C. Pink skin
D. Bluish lips

14.1 **Frequent, minor sunburn is a long-term as well as a temporary concern.**
T F

14.2 **Frequent application of sunscreen with an SPF larger than 30 extends safe time in the sun indefinitely.**
T F

14.3 **Fecal incidents in a well-maintained pool are not a cause for concern.**
T F

15.0 **During Scouting events, statistically the most prevalent cause of death is**

A. Car accidents
B. Drowning
C. Cardiac arrest
D. Falls

16.0 **List the components of Scouting's *Beginner* classification test.**

17.0 **List the components of Scouting's *Swimmer* classification test.**

18.1 **Anyone who declines to take or fails to complete the *Beginner* classification test is classified as a *Learner*.**

T F

18.2 **The *Beginner* classification test is a requirement for Scouts BSA Second Class rank.**

T F

18.3 **The *Swimmer* classification test is a requirement for Scouts BSA Second Class rank.**

T F

19.1. **A person must first complete the *Beginner* test before taking the *Swimmer* test.**

T F

19.2 **Anyone reluctant to take either the *Beginner* or *Swimmer* classification test is not allowed in the water during the testing procedure.**

T F

19.3 **A single test administrator may watch up to four participants taking the *Swimmer* test simultaneously.**

T F

20.1 **Those who are not allowed to enter the water are automatically classified as *Nonswimmers*.**

T F

20.2 **Prior to water entry, how does the test administrator determine whether the participant has been in deep water before?**

A. Asks, and asks again if in doubt
B. Takes clues from body language and/or hesitation
C. Asks the person to first swim in shallow water
D. Any or all of the above as appropriate

20.3 **During the swim classification test, who is the participant's buddy?**

A. The next Scout in line for that particular test
B. The unit leader
C. The test administrator
D. No one

Swimming Skills and Safety

Section II

Chapter 6

Safe Swim Defense

All swimming activities in Scouting are required to follow the eight basic principles known collectively as the Safe Swim Defense plan. The elements of Safe Swim Defense were formulated during the 1930s through careful study of swimming emergencies. At the 1953 National Scout Jamboree in California, thousands of Scouts swam in the ocean with the plan in place. Water-safety consultants cautioned Scout officials to expect a large number of fatal drownings, based on public statistics. There were none. Small refinements have been made to the plan over the years, but the basics have not changed. The emphasis has always been on prevention. A unit that follows the plan should expect a safe, enjoyable experience.

Safe Swim Defense should be familiar to Scout leaders who participated in the program as youth. New leaders without a background in water safety may initially find the details provided in this manual somewhat daunting. However, new leaders may ease into program. Council camps provide models, and venues with professionally trained lifeguards provide essential layers of protection for units not ready to undertake swimming activities on their own. Scouting America aquatics programs are designed for both adults and youth learn and grow through experience. Scouting's Commitment to Safety expects trustworthy adults to determine when they are sufficiently qualified to supervise particular Scouting activities. The first step in that determination is for leaders considering a unit swimming activity to complete online Safe Swim Defense training.

A summary of Safe Swim Defense, along with details on Personal Health Reviews and classification tests for Ability Groups were provided in previous chapters. The complete text is given here in bold type with additional explanatory material in regular print. Additional details on Safe Areas and training for Response Personnel are provided in following chapters.

Scouting America groups shall use Safe Swim Defense for all swimming activities. Adult leaders supervising a swimming activity must have completed Safe Swim Defense training within the previous two years. Safe Swim Defense standards apply at backyard, hotel, apartment, and public pools; at established waterfront swim areas such as beaches at state parks and U. S. Army Corps of Engineers lakes; and at all temporary swimming areas such as a lake, river, or ocean. Safe Swim Defense does not apply to boating or water activities such as waterskiing or swamped boat drills that are covered by Safety Afloat guidelines. Safe Swim Defense applies to other nonswimming activities whenever participants enter water over knee deep or when submersion is likely, for example, when fording a stream, seining for bait, or constructing a bridge as a pioneering project. Snorkeling in open water requires each participant to have demonstrated knowledge and skills equivalent to those for Snorkeling award in addition to following Safe Swim Defense. Scuba activities must be conducted in accordance with the Scouting America scuba policy found in the Guide to Safe Scouting. Because of concerns with hyperventilation, competitive underwater swimming events are not permitted in Scouting.

Safe Swim Defense training may be obtained from my.scouting.org. Additional information on various swimming venues is provided in the Aquatics Supervision guide.

1. Qualified Supervision

All swimming activity must be supervised by a mature and conscientious adult age 21 or older who understands and knowingly accepts responsibility for the well-being and safety of those in his or her care, and who is trained in and committed to compliance with the eight points of Safe Swim Defense. It is strongly recommended that all units have at least one adult or older youth member currently trained in Aquatics Supervision: Swimming and Water Rescue to assist in planning and conducting all swimming activities.

The purpose of this publication is to provide unit leaders with sufficient information to confidently know when they meet the expectations set forth in the first point. This book also serves as the text for training in Swimming and Water Rescue. Check with your council service center for course offerings.

2. Personal Health Review

A complete health history is required of all participants as evidence of fitness for swimming activities. Forms for minors must be signed by a parent or legal guardian. Participants should be asked to relate any recent incidents of illness or injury just prior to the activity. Supervision and protection should be adjusted to anticipate any potential risks associated with individual health conditions. For significant health conditions, the adult supervisor should require an examination by a physician and consult with the parent, guardian, or caregiver for appropriate precautions.

This important item is shared with Safety Afloat and was covered in detail in Chapter 4.

3. Safe Area

All swimming areas must be carefully inspected and prepared for safety prior to each activity. Water depth, quality, temperature, movement, and clarity are important considerations. Hazards must be eliminated or isolated by conspicuous markings and discussed with participants.

- **Controlled Access: There must be safe areas for all participating ability groups to enter and leave the water. Swimming areas of appropriate depth must be defined for each ability group. The entire area must be within easy reach of designated rescue personnel. The area must be clear of boat traffic, surfing, or other nonswimming activities.**

- **Bottom Conditions and Depth: The bottom must be clear of trees and debris. Abrupt changes in depth are not allowed in the nonswimmer area. Isolated underwater hazards should be marked with floats. Rescue personnel must be able to easily reach the bottom. Maximum recommended water depth in clear water is 12 feet. Maximum water depth in turbid water is 8 feet.**
- **Visibility: Underwater swimming and diving are prohibited in turbid water. Turbid water exists when a swimmer treading water cannot see their feet. Swimming at night is allowed only in areas with water clarity and lighting sufficient for good visibility both above and below the surface.**
- **Diving and Elevated Entry: Diving is permitted only into clear, unobstructed water from heights no greater than 40 inches. Water depth must be at least 7 feet. Bottom depth contours below diving boards and elevated surfaces require greater water depths and must conform to state regulations. Persons should not jump into water from heights greater than they are tall, and should jump only into water chest deep or greater with minimal risk from contact with the bottom. No elevated entry is permitted where the person must clear any obstacle, including land.**
- **Water Temperature: Comfortable water temperature for swimming is near 80 degrees Fahrenheit. Activity in water at 70 degrees or less should be of limited duration and closely monitored for negative effects of chilling.**
- **Water Quality: Bodies of stagnant, foul water, areas with significant algae or foam, or areas polluted by livestock or waterfowl should be avoided. Comply with any signs posted by local health authorities. Swimming is not allowed in swimming pools with green, murky, or cloudy water.**
- **Moving Water: Participants should be able to easily regain and maintain their footing in currents or waves. Areas with large waves, swiftly flowing currents, or moderate currents that flow toward the open sea or into areas of danger should be avoided.**
- **Weather: Participants should be moved from the water to a position of safety whenever lightning or thunder threatens. Wait at least 30 minutes after the last lightning flash or thunder before leaving shelter. Take precautions to prevent sunburn, dehydration, and hypothermia.**
- **Life Jacket Use: Swimming in clear water over 12 feet deep, in turbid water over 8 feet deep, or in flowing water may be allowed if all participants wear properly fitted, Coast Guard-approved life jackets and the supervisor determines that swimming with life jackets is safe under the circumstances.**

The detailed application of some Safe Swim Defense principles, such as area safety, depends on location. Less effort is needed to ensure area safety if the unit takes advantage of established swimming areas, but temporary swimming areas may also be used with appropriate preparation.

Established swimming areas include public pools and waterparks; lake and ocean beaches maintained by federal, state, or local agencies; and private residential, apartment, and hotel pools. Some will have trained lifeguards on duty; others will not. Avoid venues where crowds hinder supervision.

Temporary swimming areas may be set up on the shores of lakes, quarries, rivers, or oceans, or be laid out in relation to a boat anchored away from shore. In areas not designed and regularly maintained for swimming, unit leadership should use a limited number of skilled swimmers to systematically examine and prepare the area. The buddy system and rescue personnel must be in place anytime anyone is in the water during area setup.

Diving boards, water slides, rope swings, floats, and other play equipment must meet state requirements for construction and supervision. Established areas should have signs warning against diving into shallow water. In the absence of such signs, all participants should be cautioned against possible injuries caused by impact with the bottom or the water. Dives into shallow water, competitive-style dives, or cliff dives are not allowed. Diving areas must be clear of other swimmers.

There is no set height from which a feetfirst entry is always safe below that height and always risky an inch above the limit. Those learning to swim may be asked to jump feetfirst from the side into depths where their feet will touch the bottom. For any heights above a few inches, the water must be deep enough that contact is not made with the bottom. The unit leader should carefully assess the safety of any activity, such as an abandon-ship drill, whenever the height of a jump exceeds the height of the person.

4. Response Personnel (Lifeguards)

Every swimming activity must be closely and continuously monitored by a trained rescue team on the alert for and ready to respond during emergencies. Professionally trained lifeguards satisfy this need when provided by a regulated facility or tour operator. When lifeguards are not provided by others, the adult supervisor must assign at least two rescue personnel, with additional numbers to maintain a ratio of one rescuer to every 10 participants. The supervisor must provide instruction and rescue equipment and assign areas of responsibility as outlined in this book. The qualified supervisor, the designated response personnel, and the lookout work together as a safety team. An emergency action plan should be formulated and shared with participants as appropriate.

If the other elements of Safe Swim Defense are in place, water rescues will seldom be needed. Most lifeguards at Scout summer camps, many of whom work several seasons, are never called upon to make a rescue. The same should be true at unit swims. Even so, there is always some chance of an unexpected medical emergency or other situation that could incapacitate a person in the water. Fortunately, rescues in a controlled situation are relatively safe, simple, and easy to learn. Danger could arise if a would-be rescuer is a poor swimmer ill-trained and ill-equipped for the situation, or if water conditions are hazardous. However, hazardous water situations would violate the third tenet of Safe Swim Defense and should not be present at a unit swim site. Chapter 10 will alert the reader to skills that should be mastered to ensure victim and rescuer safety, the equipment that supports those skills, and situations that should be included in emergency action plans. Older youth and adults who have completed the Lifesaving merit badge, Swimming and Water Rescue, are candidates for response personnel, as are those who have American Red Cross or other professional lifeguard training. Other good swimmers may be used to maintain the required 1 to 10 ratio if coached in basic surveillance and rescue techniques. The line-and-tender procedure for the First Class rank is one such technique.

Adult leaders, including the qualified supervisor, may serve as response personnel for an entire activity that is not too long. Short breaks in concentration are provided during buddy checks. If youth are used, they will generally need to be rotated so that they too may enjoy the activity. The emergency action plan may specify that response personnel with more training will handle special situations, such as a spinal injury, whereas all response personnel may respond when a reaching rescue is indicated. Response personnel will generally work as buddy pairs, with each buddy monitoring the other.

Note that council maintained and operated swimming areas, such as those at council camps, are subject to state codes and typically must have professionally trained lifeguards on duty. Regulatory requirements for the number, training, and supervision of those lifeguards supercede Safe Swim Defense protocols for response personnel for unit swims. That is, council camps are “regulated facilities” that must use professionally trained lifeguards in numbers mandated by statutes. The 1:10 ratio for lay rescue personnel does not apply.

5. Lookout

The lookout continuously monitors the conduct of the swim, identifies any departures from Safe Swim Defense guidelines, alerts response personnel as needed, and monitors the weather and environment. The lookout should have a clear view of the entire area but be close enough for easy verbal communication. The lookout must have a sound understanding of Safe Swim Defense but is not required to perform rescues. The adult supervisor may serve simultaneously as the lookout but must assign the task to someone else if engaged in activities that preclude focused observation.

Failure of timely recognition of a drowning situation is a common factor in the rare fatalities that occur where trained lifeguards are on duty. At public facilities, it is not uncommon for a single guard to scan an area that contains several dozen swimmers of various abilities. Safe Swim Defense adds an extra margin of safety by increasing the likelihood that a person in trouble will quickly be noticed. The ratio of watchers to swimmers is high, and there is redundancy in surveillance. A buddy looks after a partner, multiple response personnel watch assigned areas, and a lookout watches overall.

6. Ability Groups

All youth and adult participants are designated as swimmers, beginners, or nonswimmers based on swimming ability confirmed by standardized Scouting America swim classification tests. Each group is assigned a specific swimming area with depths consistent with those abilities. The classification tests should be renewed annually, preferably at the beginning of the season.

- **Swimmers pass this test: Jump feetfirst into water over the head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.**
- **Beginners pass this test: Jump feetfirst into water over the head in depth, level off, and swim 25 feet on the surface. Stop, turn sharply, resume swimming, and return to the starting place.**
- **Anyone who has not completed either the beginner or swimmer tests is classified as a nonswimmer.**
- **The nonswimmer area should be no more than waist to chest deep and should be enclosed by physical boundaries such as the shore, a pier, or lines. The enclosed beginner area should contain water of standing depth and may extend to depths just over the head. The swimmer area may be up to 12 feet in depth in clear water and should be defined by floats or other markers.**

Details for administering the swim classification tests were covered in Chapter 5. Anyone may stay in the nonswimmers' area without taking a test. If conducting swim classification tests is not practical for a special occasion, then everyone may be classified by default as a nonswimmer and accommodated in an enlarged shallow-water area. Areas for the three ability groups only need to be specified for those groups that are present. For example, if a unit has only nonswimmers and swimmers, there is no need to define a beginner area. If a small pool is everywhere less than 5 feet deep, and the unit has only beginners and swimmers, then the entire pool can be a single area.

7. Buddy System

Every participant is paired with another. Buddies stay together, monitor each other, and alert the safety team if either needs assistance or is missing. Buddies check into and out of the area together.

- **Buddies are normally in the same ability group and remain in their assigned area. If they are not of the same ability group, then they swim in the area assigned to the buddy with the lesser ability.**
- **A buddy check reminds participants of their obligation to monitor their buddies and indicates how closely the buddies are keeping track of each other. Roughly every 10 minutes, or as needed to keep the buddies together, the lookout, or other person designated by the supervisor, gives an audible signal, such as a single whistle blast, and a call for "Buddies." Buddies are expected to raise each other's hand before completion of a slow, audible count to 10. Buddies who take longer to find each other should be reminded of their responsibility for the other's safety.**
- **Once everyone has a buddy, a count is made by area and compared with the total number known to be in the water. After the count is confirmed, a signal is given to resume swimming.**

The supervisor must establish a system for tracking everyone who enters the water and their ability. Any system that identifies each swimmer, their buddy, and their ability group is sufficient. A handwritten list on a leader's clipboard is easy and adequate. Buddy boards and tags are useful when more than one unit is involved in a district or council activity. Everyone in the area has a buddy and is counted as part of a buddy check, including the lookout and response personnel. If the number of participants is odd, there may be one triple assigned as buddies.

When swimming from a boat, it is critical that both the qualified supervisor and the boat driver confirm all buddies are onboard, and that no one is nearby in the water, prior to starting the engine.

8. Discipline

Rules are effective only when followed. All participants should know, understand, and respect the rules and procedures for safe swimming provided by Safe Swim Defense guidelines. Applicable rules should be discussed prior to the outing and reviewed for all participants at the water's edge just before the swimming activity begins. People are more likely to follow directions when they know the reasons for rules and procedures. Consistent, impartially applied rules supported by skill and good judgment provide stepping stones to a safe, enjoyable outing.

Like the bread that holds together a sandwich, discipline and qualified supervision are the foundation and the cover that make safe Scouting a reality. Scouts are accustomed to following rules in other situations and will likely also be well-behaved during swimming events. That is particularly true if the Scouts are reminded of their dual responsibility for their own safety and that of others in the unit. Likewise, youth leadership should share in decisions and guidance. However, youthful exuberance may at times cause momentary lapses in attention; fun and a sense of adventure can overwhelm common sense. Dealing with such situations is a learning experience for youth and leaders, but leaders should realize that youngsters cannot always be expected to act rationally in the interest of their own safety. Adult leaders should therefore accept that they, not the Scouts, are ultimately responsible for implementing Scouting America rules and procedures.

Divide and Conquer. The effectiveness of supervision and discipline, as well as instruction, may depend on group size. Certain activities are often easier to oversee with a patrol of eight Scouts and two adults rather than with an entire troop of 30 Scouts and three adults. Particularly when trying things for the first time, leaders may wish to subdivide large groups to enhance the experience for all. Subdividing a large group is also useful when the activity requires special gear, such as snorkeling equipment, that is in short supply. Scouts having to wait a long time for their turn at an activity naturally become bored and restless. That, in turn, may lead to discipline problems.

Chapter 7

Swimming Locations

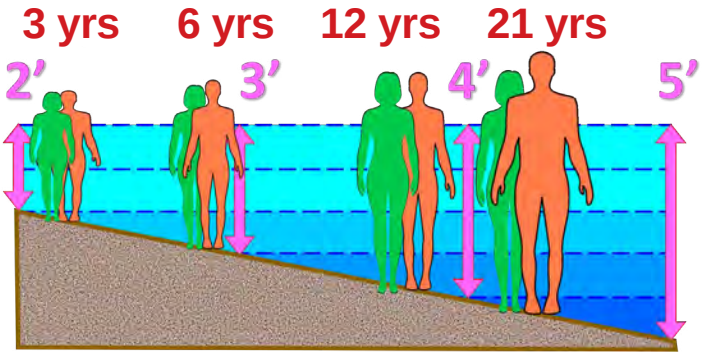
The application of Safe Swim Defense principles varies somewhat based on the setting. Means for designating areas for ability groups at an ocean beach differ from those at a small above-ground pool. Rescue equipment available on a backpacking trip may vary from that on a canoe trip. Professional medical assistance may be minutes away from an urban backyard pool but hours away from a remote camping site. So long as the basic concepts of each point of Safe Swim Defense are in place, flexibility is allowed in their execution. The following review of common settings should help the unit leader adapt the principles to various situations. All eight points of Safe Swim Defense apply at all times. If an item is not discussed under a particular heading, it is likely common to other situations that have already been covered.

Acknowledgement: Some of the content in this chapter is based on the Swim Area Safety material posted on the Water Safety USA website. In turn, that material drew from a previous version of this manual.

Common Considerations

Water Depth

Deep water poses a significant risk to nonswimmers. "Deep" is any depth where a person cannot easily stand to breathe, and varies with a person's height.



Underwater Hazards

Drop-offs, rocks, trash, debris, weeds, muddy bottoms, and some aquatic life threaten safety and enjoyment. Check before use.

Water Quality

Pollution and contamination pose health risks. Obey signs. Avoid foam, scum, algae, and areas soiled by water fowl. Do not use pools with green or murky water.

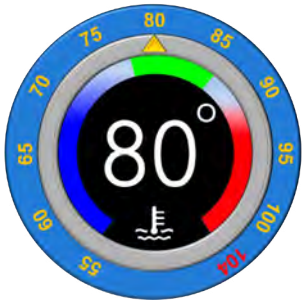
Water Clarity

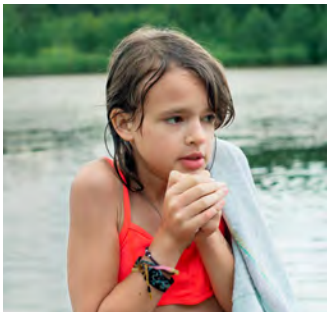
Visibility varies in natural waters. Murky water hides hazards and hinders rescue. Life jacket use is prudent for deep, murky conditions.

Water Temperature

Limit time in water that feels cold*.

typical pool settings:
therapy 86-89 º F
seniors 84-86º
instruction 82-86º
competition 79-81º

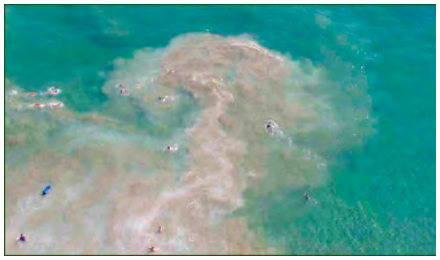




* See Chapter 15: Cold Water Survival

Moving Water

Current and waves in rivers, lakes, and oceans pose risks for all swimmers. Exercise caution in all cases. Currents may be hard to see and difficult to swim against. Rip currents are particularly hazardous. If necessary, relax and swim across the current or float with it.



Swimming Venues

Swimming is one of the most popular recreational activities in the United States, so it is not surprising that there are numerous locations and venues, both public and private, where such activities occur. The following categories will be discussed in more detail, along with variations such as differences between in-ground and above ground pools, and swimming from boats. The order is roughly based on the effort needed to comply with Safe Swim Defense procedures.

Scout Camps

Guarded Areas

Private Pools

Lakes

Rivers

Oceans

Council Camps

Scouting America's camp standards require adherence to all points of Safe Swim Defense for swimming activities under council supervision. Camp personnel, rather than unit leaders, bear primary responsibility and will provide guidance with regard to pre-camp swim classification options and buddy assignments both for swimming and moving about camp. Unit members that take advantage of such opportunities are also provided with models for conducting their own swimming activities at other locations.

Scout camps provide reliable swimming locations without significant effort from unit leaders.

Public Facilities with Lifeguards

Public swimming pools, water parks, and guarded swim beaches have good safety records. Units are encouraged to swim in regulated areas where the facility operator provides trained lifeguards. Safe Swim Defense application in such situations is less complicated since the unit is not solely responsible for area safety and emergency response. However, the unit leader is not relieved of all safety concerns.

At guarded facilities, the unit is still responsible for medical screening, ability groups, the buddy system, discipline, and supervision.

Safety records at regulated facilities are good when lifeguards quickly recognize and respond to crisis situations. However, Safe Swim Defense guidelines generally mandate a higher standard for crisis **prevention**. The proven preventive strategies of Safe Swim Defense should be implemented to complement nominal facility procedures. That can generally be done without being obvious or obtrusive.

Even though many rescue situations arise from poor swimming ability or health conditions, few public facilities screen for either. Poor swimmers are seldom excluded from deep water, and water depths may not be well marked in natural bodies of water. When a Scouting America unit uses a guarded facility, the adult supervisor remains responsible for knowing the swimming ability of each unit member and pointing out areas of appropriate depth for those in different skill classifications. The supervisor should then watch to see that such instructions are followed. Any special safety precautions indicated by a temporary or chronic medical condition must be observed.

The few drownings that do occur where trained lifeguards are on duty are often blamed on lack of timely recognition that someone is in trouble. Swimming areas at a public facility may be scanned by only a single guard who is responsible for dozens of people. Ideally, guards are highly skilled and motivated and closely supervised. Rarely, a sole teenage lifeguard can become complacent or overwhelmed and may not perform as trained. A moment of distraction to deal with an unruly patron at a critical time is all it takes for a drowning person to slip unnoticed to the bottom.

To increase the margin of safety, Safe Swim Defense suggests a much larger guard-to-swimmer ratio than mandated by most state regulations. The unit leader need not assign unit personnel to act as guards to maintain the recommended ratio, but should act as a lookout wherever the unit swims, particularly if the facility is crowded. Additional surveillance is provided by the buddy system. Although it may be impractical to conduct buddy checks at a public facility, each member of the unit should still be assigned a buddy and given the responsibility to notify guard personnel immediately if their buddy needs help. At Cub Scouting events for Lions and Tigers when parents participate with their children, parent and Cub Scout should be paired as buddies.

At the end of a session at a public facility, the unit leader is responsible for ensuring that everyone is accounted for. A time and a meeting place should be given to everyone at the start of the activity. Buddies should be told that they are responsible to make sure their partners are present on time. Generally, swim periods should last roughly an hour.

Learn and follow area specific rules.

Plan ways to track Scouts at venues with multiple attractions.

Avoid crowded pools and beaches.

Some guarded facilities have safety protocols not specifically covered in Safe Swim Defense. Some rides at water parks may have minium height requirements. Flags at surf beaches may indicate zones for various activities, such as swimming and surfing, and hazards, such as rip currents. During the activity tailgate review, unit leaders should cover facility specific rules with unit members.

At large water parks where several activity features are spread over a large area, unit leaders should base supervision on age. Den leaders should accompany Cub Scouts from area to area, serve as lookouts, and assemble everyone before moving en masse to the next feature. Although it may not be practical for the entire den to line up together for each activity, buddies should be in line together. Scoutmasters should ask patrol leaders to keep patrols together and to report together as a patrol at the end of the session. Venturers may proceed in small groups from one activity to another so long as they remain with their buddies.

During major holidays, public swimming facilities and beaches near major urban areas can be extremely crowded. Units should avoid planning trips to such locations at those times.

This section assumes a unit has chosen a swimming location where professionally trained lifeguards are provided by the facility operator. State codes often mandate the presence of lifeguards, particularly for public pools. However, regulations vary by state and some commercial venues, particularly in natural waters, may provide staff and amenities but not lifeguards. Unit leaders should always check when planning an outing.

Scouting America's Aquatics Play Structures Policy, which guides inflatable use at council camps, may help evaluate commercial water parks featuring similar attractions. Those should provide lifeguards as well as other safeguards.

Check venue staffing and safety protocols when doing a SAFE assessment prior to an activity.

Private Residential Pools

The most common drowning incident at private backyard pools occurs when an unsupervised toddler enters the water. A second risk factor arises from headfirst dives into shallow water. Otherwise, the small size, shallow depth, and clear water can provide a good venue for units following Safe Swim Defense procedures. Rescues, if needed, are relatively simple, and EMS services are often close at hand. However, the familiarity and apparent simplicity of the setting can lead to complacency. Unobserved youth drownings sometimes occur at private, non-Scout, pool parties even when several adults are present. As always, it is essential for supervisory personnel to maintain close, uninterrupted surveillance of the area. Many private pools are too small to comfortably accommodate an entire pack or troop at once. Rather than allow Scouts to move at will from one backyard activity to another, tracking those in the water may be easier if only a single den or patrol is allowed in the water at one time, with everyone checking in and out together.

Appropriate rescue equipment includes reach poles and flotation devices, such as a rescue tube or ring buoy. The emergency action plan (EAP) should cover extension assists for active victims, wading rescues for unconscious victims, and the location of a phone for calling emergency services. The "tailgate" review before the swim should include the importance of watching your buddy, signals and procedures for buddy checks and emergencies, and prohibition of headfirst entry. Review Chapters 10 and 11 for rescue equipment and EAPs for various situations.

In-ground.

Above-ground with deck.

Above-ground without deck.

Considerations for backyard in-ground pools:

- Too shallow for diving
- Swimmer and beginner or beginner and nonswimmer areas may be combined depending on size and depth
- Will need to assess and deploy response personnel with appropriate rescue equipment
- Extension assists from the side may suffice for active victims; wading assists may reach passive victims
- Lookout may be placed at shallow end with response personnel on opposite sides at deep end
- Lines across pool may provide temporary area boundaries, if needed, but should not pose tripping hazards
- EMS response time often short
- May be too small to effectively conduct swim classification tests

Considerations for above-ground pools:

- Similar to private in-ground pools; e.g., no diving
- The entire pool may be a single ability area, given the fixed depth and small size
- Fixed depth may be too deep for short nonswimmers, who may need approved flotation devices

For above -ground pools without a raised deck:

- May need to station lookout on the entry ladder, with other safety team members in the water.
- Removal of incapacitated persons from the pool needs consideration.

Private pool owners are responsible for maintaining water quality standards. Units should not swim in pools with green or cloudy water.

If there is a fecal incident, that is, stool or diarrhea released in the pool, the activity must be cancelled.

Recreational water illnesses (RWIs) from contact with contaminated water are generally not severe but can be life threatening.

Pool Barriers Save Lives!

Although most Scouts are old enough to circumvent various pool barriers such as fencing, any Scout leader or parent with a backyard pool should understand the risk posed when toddlers have unsupervised access to pools. Chapter 3 noted that drowning is a major cause of death for young children, with higher rates for ages 1- to 3- years. Many of those occur in backyard pools when a child, not then at the pool, is left momentarily unsupervised. Pool barriers, such as surrounding fences with self locking gates, and some pool covers, are highly recommended and mandated by statue in many areas. Data confirm that such codes reduce drowning rates. See the US Consumer Product Safety Commission's Pool Safety website for details.

Hotel, Apartment, and Condo Pools

Semiprivate pools without lifeguards on duty are similar to private backyard pools but are shared with others. Moving lines across the pool to shift areas for ability groups may not be practical. It may be necessary to instruct nonswimmers not to go past a certain point, such as a ladder, and station the lookout at that location as a reminder and to enforce the rule. Many newer pools have a maximum depth of 5 feet, so separate beginner and swimmer areas may not be needed. If the unit is small enough, and the pool not crowded, unit safety team members can do frequent head counts in lieu of formal buddy checks. Otherwise, a visual signal for a buddy check may be substituted for an audible one, with the unit all meeting at one end of the pool. (Recall that the primary purpose of a buddy check is to reinforce the concept of each person watching another. A slightly prolonged procedure still accomplishes that goal. Buddy checks are not conducted often enough to serve as the primary indication that a person has submerged. Prompt recognition of an emergency is the joint responsibility of the buddy, the response personnel, and the lookout.)

Most states require semiprivate pools to post rules, depth markers, no-diving signs, and rescue equipment such as a reach pole (likely a shepherd's crook), a ring buoy, and sometimes a backboard. Before the swim, make sure the equipment is in working order. Determine how best to summon EMS, for example, by cell phone, through an attendant, or by house phone to the office. Make sure you know how to provide directions. The dispatcher may not be able to bring up your location if a cell phone is used, and responders may need instructions on how to find the pool from the main entrance.

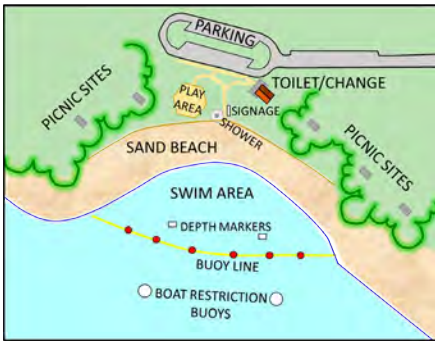
The emergency action plan should include how to deal with situations involving those in the pool who are not members of the unit. It is perhaps more likely that unit response personnel will need to aid other users rather than Scouts.

Considerations for hotel and apartment pools:

- Dealing with other users
- Assigning response personnel
- How to define ability areas
- Checking rescue equipment
- How to track buddies
- How to summon EMS

Designated Lakefront Swimming Areas

Swimming is often done in lakes, ponds, dammed rivers, and quarries. Although clear-water springs can provide water quality and clarity close to that of a swimming pool, visibility is impaired in many natural bodies of water. In clear water, swimmers and those in trouble may be tracked underwater, and a search for a submerged person takes only seconds when safety team members are positioned with clear views of the surface and the bottom. In murky water, the margin for error is reduced. Prompt rescue requires that an emergency is spotted before a person submerges. Locating a submerged person in turbid water may take more time than the victim has. Every aspect of Safe Swim Defense needs rigorous attention.



Public lakefront swimming areas are maintained at many state and federal parks. Even though such areas often do not have lifeguards on duty, they may be equipped with changing facilities, sandy beaches, floating platforms, buoys that restrict boating, and other amenities that make them reasonable choices for a unit swim.

The U.S. Army Corps of Engineers, which manages over 400 lake and river projects, reports five times the number of swimmer fatalities at undesignated versus designated swim areas, or seven times if swimming from boats is included. That is, the *Safe Area* requirement in Safe Swim Defense is an important level of protection. Units that choose maintained, designed swim areas are a step ahead, but must still consider the other seven points.

Design standards for designated swim areas in lakes vary depending on the jurisdiction that maintains them. Buoy lines may be positioned to mark a boundary at 4, 5, or 6 foot depths. Generally, the bottom slopes gently from zero depth to well past the boundary line.

Uniform bottom slopes typically range from 5% to 12.5%, that is, from 1 foot in depth for every 20 feet, to 1 foot in depth for every 8 feet from shore. That places a boundary line marking the 5 foot depth from 40 to 100 feet from shore. Such gentle slopes may provide a large wading area for nonswimmers and allow beginners and swimmers to share the entire area up to the boundary line. However, response personnel stationed on shore for visibility may have a long distance to wade and/or swim to a person in need. It may be that a person's nearby buddy will provide aid prior to backup by the response team.

Limiting the activity area to a within a boundary at a depth of 4 or 5 feet should also make it easier to find a submerged victim in murky water. Note however that not all designated swim areas are limited to such depths. Unit leaders should confirm depth contours and provide for the different ability groups as appropriate.

If possible, a unit should conduct its swim in an otherwise unoccupied portion within the designated swimming area. The unit will likely need to bring its own rescue equipment. Reach poles will be of limited usefulness on a sloping beach. Instead, equip rescue personnel with lines and flotation devices. Emergency action plans need to consider the possibility of submerged victim recovery. To make that task easier, the adult leader may wish to limit the extent of the swimmer area and the depth to less than the 8 feet allowed in Safe Swim Defense. Depending on the area and the experience of the safety team, it may be prudent to have all participants wear life jackets. Also check with park personnel on access to EMS.

Considerations for unguarded designated swimming areas in lakes:

- Dealing with other users
- Defining ability areas using existing markers
- Providing rescue equipment
- How to summon emergency aid
- Checking depths
- Assessing and assigning response personnel
- Submerged victim recovery
- Potential life jacket use

Obey signs posted at designated swim areas. If the area includes a pier or dock, restrict diving as appropriate and keep swimmers from going beneath structures.

Rarely, people will be apprehensive of turbid water even though they can swim well in a pool. Such people will probably self-limit activities in a natural body of water and may need patient encouragement along with remedial exercises before they become comfortable with a swim test or boat swamping exercise. They should not be assigned as response personnel in murky water if they are uncomfortable with the setting.

Temporary Lakefront Areas

A unit may take advantage of lakefront areas at a private residence, near a campsite, or on a break during a lake canoe trip. Setting up a safe swimming area in such settings obviously requires more effort than using a purpose-built pool or a beach maintained in a park. However, the benefits are often worth the effort, and the task can strengthen unit teamwork.

The first task is to find a promising location free from obvious pollution or other hazards with easy access to the water. Location scouting is generally done in advance by a small group rather than by the complete unit ready to swim. A sandy beach sloping into shallow water is ideal. Access may also be provided from piers.

Areas with flooded trees above and below the waterline, mud bottoms which make walking difficult and stir up sediments, rocks large enough to hinder walking, or weeds that impede walking and swimming may not be suitable. Lakes in abandoned quarries may have steep sides that restrict exits and sudden drop-offs into very deep water.

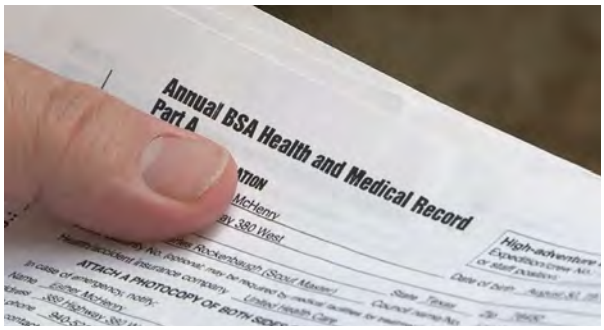
After a promising area has been identified, it then needs to be checked for underwater hazards and whether or not there are suitable depth ranges for the various ability groups.

Nonswimmers must be limited to water depths were they can easily stand, about waist to chest deep. Beginners should have water of standing depth within a few strokes. Areas for swimmers are limited to twelve feet in clear water and eight feet in murky. (Those depths are set based on the ability of response personnel to find and recover submerged victims.)

However, swimmers need not have water over their heads in depth to enjoy a cool dip. It may be prudent to limit everyone in the unit to standing depths. That's particularly appropriate if the unit lacks experience in conducting remote swims. It is also reasonable if the bottom slope is so gradual that deep water is an extended distance from shore.

Clear water can be checked for underwater hazards by a pair of swimmers at the surface, with response personnel watching from shore. Depths can be checked by one of the buddies doing a feet-first surface dive while the other watches. If the bottom can't be seen from the surface, the procedure is more involved, as shown on the next page.

Remote Swimming Area Setup



1. Prior to the setup, check health histories.

2. Determine swimming abilities.

3. Review and refresh rescue training.

4. Assemble a swim kit with rescue aids and setup materials.

5. For large units, use a small group of older youth or adults and clearly explain roles.

6. Safe Swim Defense applies during setup: assign buddies.

7. Assign, coach, and station response personnel.

8. Post a lookout, who may be the Qualified Supervisor guiding the activity.

9. Check shallow water with a line of swimmers wearing shoes. If debris cannot be removed, find a different location.

10. Sweep parallel to shore and check for depths and drop offs as well as debris.

11. Use a single good swimmer to check deeper water using feet first surface dives.

12. A safety line and safety swimmer may be used. In murky water, consider limiting the maximum depth to less than the allowed 8 feet.

13. After checking for depths and hazards, mark the area for ability groups. Only groups actually in the unit need defined areas.

14. Use floating rope to enclose nonswimmer and beginner areas. Participants should encounter a physical barrier at the edge of their areas.

15. Boundary floats or distinct features are sufficient for the swimmer area.

16. For more detail, view the Remote Area Set-Up video.

Considerations for Temporary Lakefront Areas:

- Selecting potential area
- Setting up ability areas
- Providing rescue equipment
- Checking area for hazards
- Assessing and assigning response personnel
- Developing and sharing an Emergency Action Plan

Some bodies of water, particularly lakes formed by dams, are bounded in areas by rock cliffs and ledges. Such sites often tempt youth to test their mettle by diving or jumping into the water from as high as possible. Recall that diving is allowed from a maximum height of 40 inches into **clear, deep** water. There is no magic height above the water at which feetfirst entry goes from safe to hazardous, but Safe Swim Defense guidelines caution against jumping from heights greater than a person is tall.

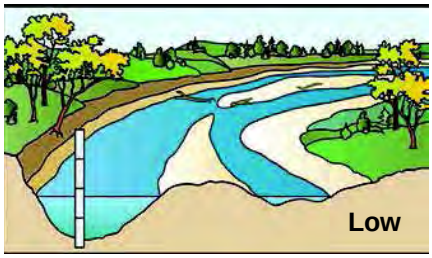
Electric Shock Drowning

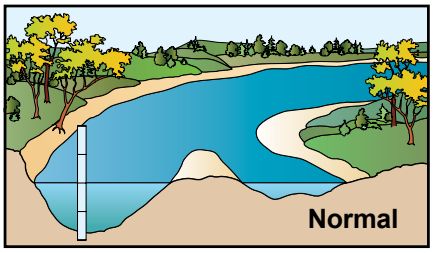
Electric current from faulty wiring on piers or boats can result in a fatal shock or incapacitate swimmers, causing them to drown. That situation is rare since electrical codes require ground fault circuit interruption devices to be installed on circuits near the water. However, faulty circuits leaking current, particularly into fresh water, claim lives yearly. Units should avoid setting up swim areas around marinas with AC electrical power even if the area is free of boat traffic.

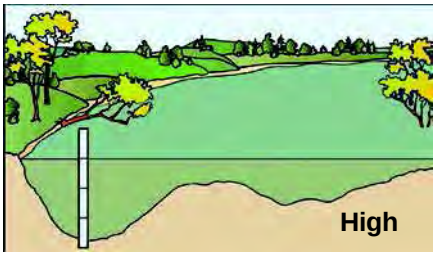
Rivers

After a hard day of paddling, a dip in the river can be refreshing, but safe swimming in a flowing river requires an understanding and appreciation of river currents. Currents define how depths vary across a river as well as presenting the potential hazard of pushing a swimmer downstream. Free-flowing rivers as unit swim sites are best suited to Scout or Venturing units with a majority of members classified as **swimmers**. Such rivers are not recommended sites for Cub Scout swimming or for units with a large percentage of poor swimmers.

Because rivers differ significantly from still-water bodies and from one to another, an overview of river properties is useful before discussing how to set up a safe swim area in a river. There will be numerous situations to avoid, but also several options for a safe area. Conducting a safe swim in a river likely requires the unit leader to exercise more judgment than setting up a safe swim in a small backyard pool. If all factors do not fall into place, the unit leader should find another area or cancel the swimming activity.





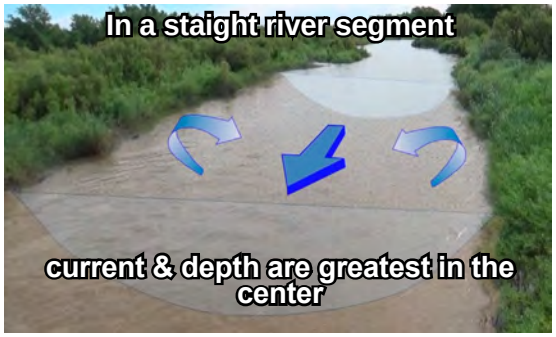


Rivers change dramatically between low water and flood stage. At low water in a large river, there may be more than one channel separated by sandbars. The main channel may still have significant water flow, but subsidiary channels tend to be slow and shallow. The secondary channels may be good candidates for a simple wading area. All ability groups can splash around and cool off even if the water is not deep enough for swimming.

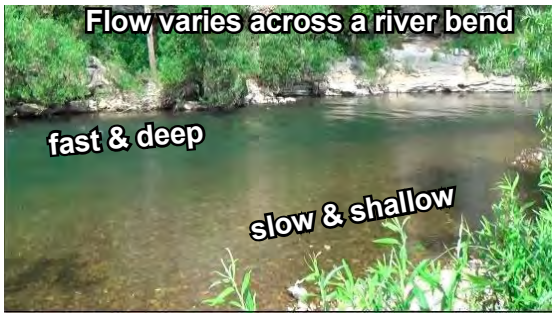
Rivers at flood stage are dangerous. Do not swim or wade during high flows—when the river is out of its banks, for example. Debris flowing past is also a sign of high water.

River levels between extremes can be deceptive. Even an apparently gentle river without waves can conceal a major current. Look for partially submerged vegetation at the edge of the river to determine whether it is higher than normal. Also monitor the water level during a swim. Rains or dam releases far upstream can quickly increase currents and flows.

Although ever changing, river currents do behave in generally predictable ways. When an unobstructed river flows straight, the deepest water and fastest current will be near midstream. The faster water in the center of the channel draws water from the edges along the surface. A swimmer floating near the river's edge will slowly be drawn into the main current.

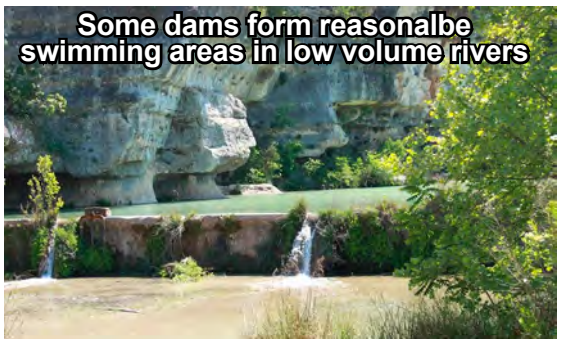


When the river makes a turn, the deepest water and fastest current will be on the outside of the bend. A steep bank and undercut trees often characterize the outside of the bend; the inside of the bend may have shallow, relatively slow water. Swimmers unfamiliar with rivers may get into trouble because they do not realize that both the depth of the water and the strength of the current can vary rapidly as they wade out from the flat, sandy area on the inside of a bend. If unwary swimmers, or capsized boaters, are caught in a river current free of obstructions, they should swim for shore, ideally toward the side on the inside of a bend. Because of the current, the swimmer will actually move downstream at an angle to the shore.

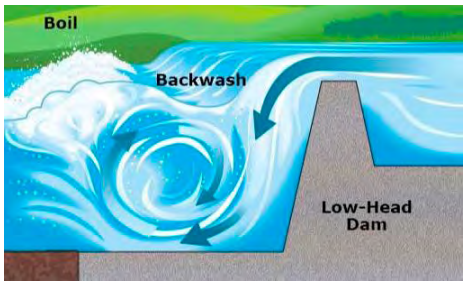


If the bend in the river is sharp, a countercurrent, or eddy, may form on the backside of the turn, as shown in the illustration. That is, the water actually flows upstream. Crossing the eddy line may cause problems for unwary swimmers and boaters. (Learn more about eddies and other river features in Chapter 20 and 21 on river boating.)

Water depths in many small rivers or streams are too shallow for swimming and boating except in pools created by small dams constructed for irrigation or recreation. Such dams impede but don't stop the flow. The pools may be very long even behind a low dam and generally make good swimming areas. However, be aware that bottom contours and debris may change from one visit to the next, particularly after floods. In dry summer months, the water may fall below the outlet and become stagnant and unfit for swimming.



When the water is flowing, the current in the pool is generally slight, but nevertheless present. Swimmers should stay well away from the outlet, which might be a large, barely submerged pipe, an adjustable chute at the bottom of the dam, or a small cut and spillway with water flowing over the top of the dam.



In some cases, the entire length of the dam serves as the outlet. Such dams were designed to dissipate the energy of the water by recirculating the flow back toward the dam. That creates an extremely dangerous situation called a hydraulic, also known as a "drowning machine." A person caught between the dam and the boil line will be endlessly tumbled. The only ways out—both risky—are to work toward the side abutments or to dive for the bottom in search of a downstream flow not blocked by debris or design barriers. Hydraulics, also known as holes, are additionally formed by ridges and ledges in whitewater rivers. **Never swim near a hydraulic!**

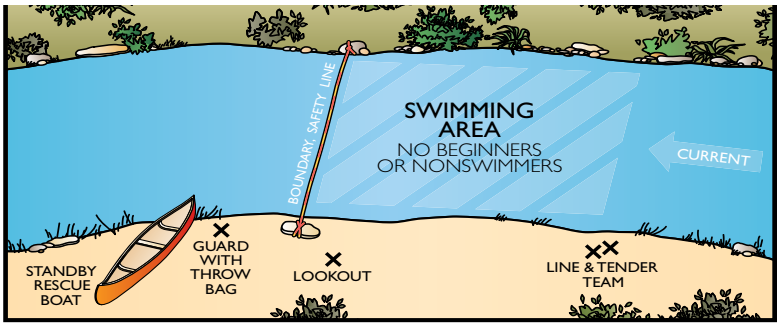
A whitewater rapid is no place for a swimmer and does not meet Safe Swim Defense standards for a safe swimming area. However, some whitewater rivers are the "pool and drop" variety. Most of the change in elevation occurs near stepped falls or ledges followed by sometimes lengthy sections of relatively slight gradient. The pools between the drops can be good places for a swimming break, provided the current is not strong enough to sweep swimmers into the next rapid.

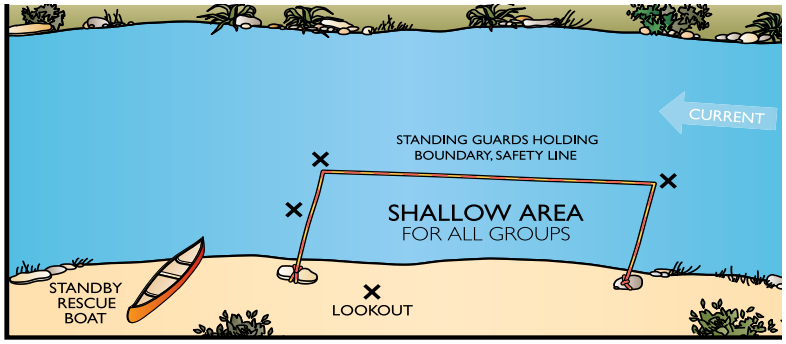
To establish a safe swim area in a river, first consider the current. Avoid currents strong enough to impede walking or swimming and places where a weak current is likely to carry swimmers into an area of danger, such as a strainer, a hydraulic, or a series of rapids. Look for safe areas on slow-moving rivers on the inside of a bend, in a pool between small drops, or behind a low dam that has only a slight water flow over an isolated spillway.

A sand or gravel beach on the inside of a river bend makes a likely spot. Locate the swimming area on the upstream side of the beach so that swimmers have the rest of the beach as a safe haven if needed. Check the depth and the current toward the main channel using a good swimmer holding a line. Make sure the line is held securely on shore: a single person may not be able to hold a swimmer stepping into the current. If the current in the channel is strong enough that swimmers will be moved downstream, then limit the swimming area outside of the channel. It is not necessary for Scouts to have water over the head in depth for them to cool off and have fun. Safe Swim Defense policies define maximum, not minimum, swimming depths.

A 'Safe Swim Area': slight current, shallow water, lifejackets worn, response personnel defining area with floating line, line & tender team, supervisor also serving as lookout.

Although makeshift buoys or other isolated objects are often sufficient to define a swimmer area, floating lines can provide additional assurance that swimmers remain away from off-limit areas. Stretching a line diagonally across the width of the river is sometimes feasible, but not always practical, particularly if boaters are using the area at the same time. If the depth of the swimmers area is less than chest deep, then an alternative to anchors is to have the line held by safety personnel. Attach one end of a long line onshore at the downstream end of the area. Have two members of the safety team wade out with the rope to just over waist deep. One person remains there to define the maximum distance from shore and supports the line in place. The other person continues with the line upstream and parallel to the shore. The resulting L-shaped corral defines the swimmers area. If needed, either person can drop the line to assist a person in trouble. Alternately, the line may be pulled toward a distressed swimmer.





Regardless of whether safety personnel are deployed in the water, there should also be a line-and-tender team onshore. Other safety team members can be positioned with a throw bag near the downstream end of the area. If the condition of the bank is such that a swimmer moving downstream with the current cannot easily be followed onshore, then a boat may be kept on standby to retrieve that person.

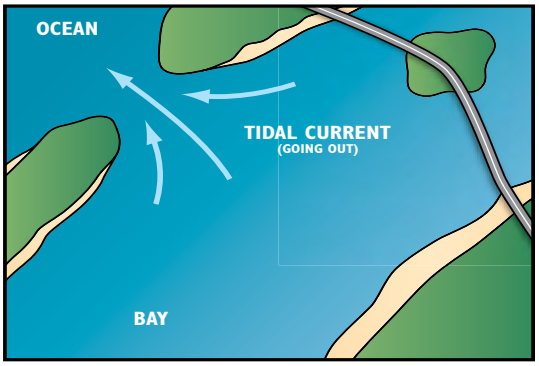
A flowing river is less than ideal for a unit with a large percentage of nonswimmers and beginners. However, the technique described above can be used to define a small region of shallow water for a combined nonswimmer/beginner area. In that case, extend the upstream end of the line back to shore to completely enclose the area. Having the bathers wear life jackets will provide an extra margin of safety.

If there is a noticeable current beyond the confines of the established swimmer area, Scouts may well ask permission to jump into the current, float downstream, exit, and repeat. In the proper circumstances, such a natural "waterpark ride" provides an opportunity to teach river boaters swift-water survival skills in a controlled setting. However, "control" is the key. The downstream area needs to be free of obstacles for a long distance, and there needs to be an easy place to exit. Limit such an activity to swimmers, have them wear life jackets and helmets, and instruct them to float feetfirst. Allow only one person to "launch" at a time. Make sure the course is within easy reach of a throw bag over the entire route. Also consider putting a "safety line" in the water near the exit. Supervisors should be skilled in river float trips and ideally have training in swift water rescue.

Oceans and the Great Lakes

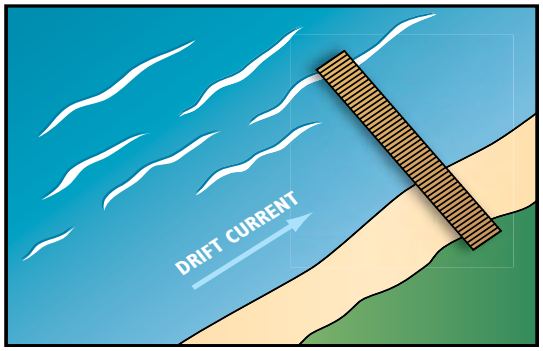
Establishing a safe swimming area in the ocean requires consideration of currents, waves, access, and marine life. Swimming areas need to be separated from surfing or boating activities. Concerns with water clarity, purity, and temperature are similar to other areas.

The cycle of high and low tides causes **tidal currents**. In some coastal areas, the main shoreline is separated from the open ocean by a series of barrier bars and islands enclosing shallow bays. The current in tidal channels between the islands can be strong enough to wash human-powered boats or swimmers out to sea. Avoid swimming in such areas, and be alert to changes in the strength and direction of currents as tides wax and wane.



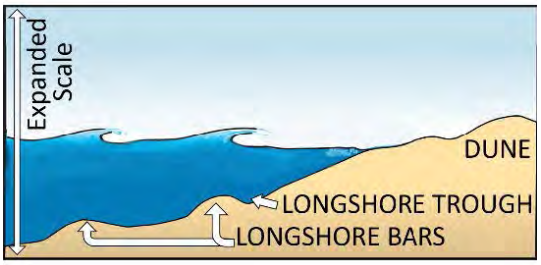
Tidal currents flow to & from open ocean

Longshore currents, also known as drift or lateral currents, move parallel to the shore. They will not carry a swimmer out to sea, but they can wash an unwary person toward areas of potential danger such as pilings or rip currents. Buddies and safety personnel should check to see if swimmers are drifting along the beach. If so, the swimmers should swim directly toward shore until they are able to wade back to the group. Swimming against the current wastes energy.



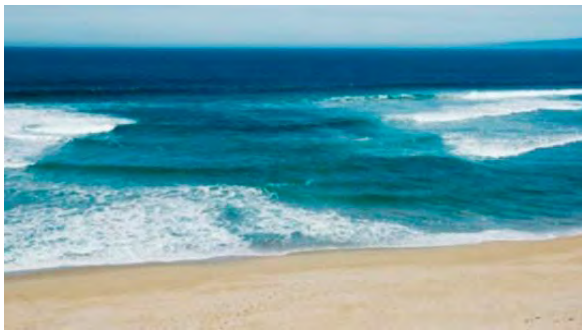
Longshore currents flow parallel to shore

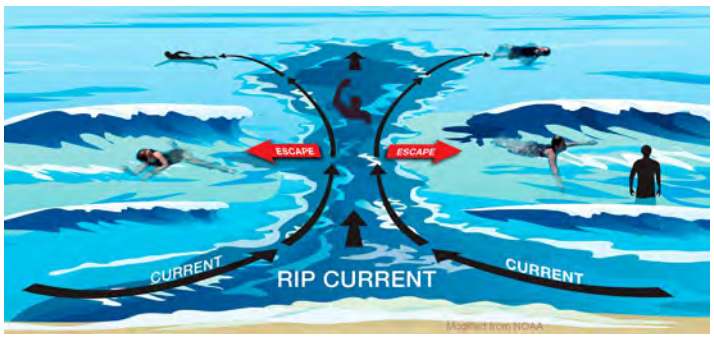
In some cases, drift currents run in a "gutter" or trough inside the surf line between the beach and a shallow sandbar. Such holes can present a danger to poor swimmers, particularly shorter children who may go from standing depth to water over their heads in a single step. Even though the beach near the shoreline may appear to be gently sloping, coastal beaches can have abrupt changes in depth due to gutters, sandbars, low-tide shelves, and waves.



Depth profiles at beaches are not uniform

Water cast upon the beach by waves must eventually return seaward. In some cases, that return flow occurs in strong, isolated currents known as **rip currents**. Rip currents typically form at breaks in sandbars and alos near structures such as jetties and piers. They are common on all surf beaches, including the Great Lakes. Some are fixed in location; others change as sandbars shift. Intense temporary rips may appear quickly in response to changing conditions, such as a surge from a storm moving toward land.





Rip currents can sweep even the strongest swimmer away from shore. Preferably, swim near a lifeguard. If caught in a rip current, relax and swim out of the current, not against it, with a restful stroke, and then to shore. Float, wave and shout for help if needed.

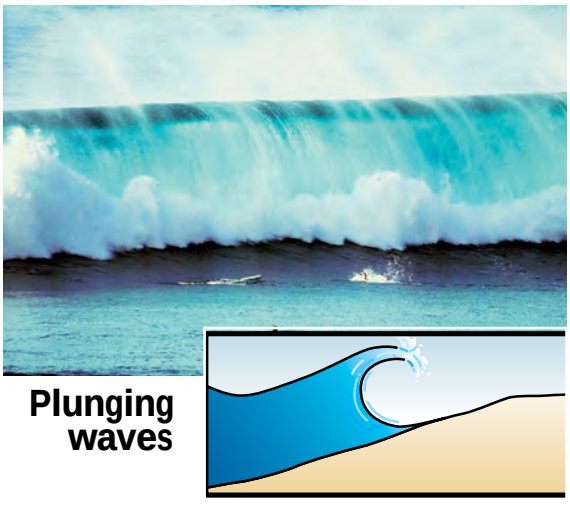
Rip currents can pull unwary swimmers into deep water and sweep them many yards offshore. Poor swimmers may panic and need help after they exhaust themselves trying to swim to shore against the powerful current. Instead, they should relax and swim parallel to shore until they are out of the current. Generally the distance will be short, but may be comparable to the length of the Scouting America swimmer test (50 plus yards). In such a situation, it helps to know restful swimming strokes. Once out of the current, the swimmer should probe with the legs for the bottom. There may be standing depth on an adjacent sandbar. Otherwise, the swimmer can continue to shore outside of the rip. A discussion of rip currents should be included in the "tailgate" review that precedes a unit swim in any area where they are likely. Addtitional information on rip currents is provided by the United States Lifesaving Society.

Backwash, or runback, is caused when the water cast ashore by a wave flows seaward down the slope of the beach. The flow at the shoreline reverses promptly as waves push water onto the beach which then recedes. That flow is often apparent to a person standing in shallow water and may be more noticeable on steep beaches. The rushing water may affect a person's footing, but it isn't normally dangerous, except perhaps for a small child or an inexperienced swimmer. As always, both such groups should be closely supervised. Breaking waves combined with backwash may cause them distress.

The backwash people feel on their feet, combined with a missunderstanding of rip currents, may have led to the concept of people being caught in an "undertow" and dragged under. Rip currents carry people offshore, they do not suck people down and hold them underwater.

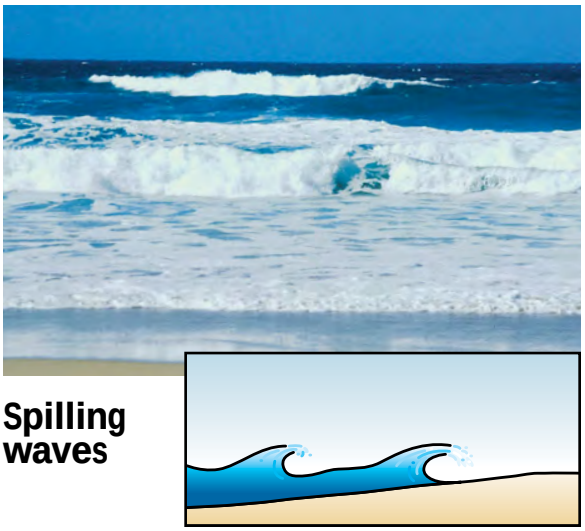
Surf is formed when waves meet the shore. Wave strength depends on offshore winds, the steepness of the beach, and whether the tide is in or out. Waves approaching a beach travel as swells formed mainly by offshore winds. If the water remains deep, energy is released as swells hit rocks, jetties, fishing piers, or other structures. Such **surging waves** push swimmers violently against such objects and should be avoided.

If the shoreline consists of a steep beach, swells will become higher as they approach shore. **Plunging waves** topple over the wave front with a large, sudden release of energy. Such waves are favored by expet surfers but are hazardous for swimmers.



IF IN DOUBT, DON'T GO OUT!

If the slope of the shore is gentle, then waves will not get as high and energy is released when the top of the wave tumbles, or spills, down, the wave front. Small **spilling waves** can be enjoyed by good swimmers who understand how they behave. Poor swimmers should avoid any waves in which they cannot easily retain their footing and remain upright. Small children, regardless of swimming ability, should be closely supervised at all times, limited to near shore activities, and kept within arm's reach. Properly fitted, U.S. Coast Guard approved life jackets add an extra layer of protection.



Spilling waves

Swimmers should face the waves and be alert to water movement. Swimmers should be cautious when ducking into waves. Head first dives into the bottom can result in serious spinal injuries, including paralysis or death.

Closely supervise young children

Be alert to water movement

Avoid diving into the bottom

Lifejackets and lifeguards provide additional protection

Access to the water on a sandy beach is straightforward, but not all shorelines have large stretches of sand. In some areas, the surf impinges on cliffs at high tide, with patches of shingle (coarse pebbles) or sand exposed at low tide. Care should be taken when swimming at the base of a cliff during low tide to avoid being trapped against the cliff as the tide comes in.

Low tide

High tide

In other areas, stands of thick mangroves line the shoreline and prevent access. In still other places, the shoreline is composed of ancient rough coral. Stout footwear is needed in that case.



Footwear can also protect against some types of marine life. Rays and urchins have spines that may be embedded in a foot if stepped on. Jellyfish and sea anemones sting by contact with their soft tentacles. Contact with certain types of coral will also result in skin irritation. The result of a sting can range from mild discomfort to a life-threatening allergic reaction. Because of the latter, the unit supervisor should make marine life a consideration in an emergency action plan when swimming in the ocean. At some beaches, warnings against jellyfish and rays will be posted. In a few areas, kelp or other vegetation may be thick enough to pose a hazard by impeding swimming.





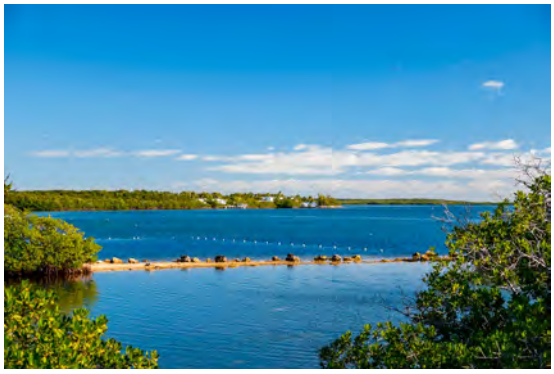

Attacks by other types of marine life, such as sharks or crocodiles, are rare in this country but not unknown. In other countries, attacks by marine life may be more prevalent, and stings from box jellyfish may be fatal. Seek advice from locals when swimming in unfamiliar areas.

To establish a safe swimming area at a surf beach, first find an area of safe, easy access away from strong currents. Abide by any posted signs limiting use of the area. If the unit has nonswimmers and beginners, combine them into one group limited to an area shoreward of safety personnel standing where waves crest no more than chest high on the participants. The responders should be aligned with markers on the beach that establish the lateral limits of the area. If each responder faces the opposite corner of the area, they should be able to see each other and each scan the entire area. The participants may feel more secure if life jackets are worn.

A second rescue team, equipped with a line and a flotation device, should be assigned to watch the swimmer area. Ideally, the outer limits of the swimmer area should be marked with anchored buoys. However, if buoys are impractical, the swimmers should be instructed to stay within a given distance of the guards, say 50 feet, or no farther out than the guards are apart. A buddy check can be called if a buddy pair strays too far out. Water depths where the troughs of the waves are at chest height should be adequate for a swimmer area. However, the depth at a reasonable distance from the safety team will depend on the slope of the bottom.

If a large troop is involved, it may be advisable in some settings to divide the unit into smaller groups, either by swim classifications or patrols, each with its own supervisor, lookout, and response personnel.

Not all ocean beaches have noticeable surf, particularly in bays. Safe Swim Defense specifics at a "non-surf" ocean waterfront are similar to those at a lake or pond. Areas at non-surf beaches where the water clarity approaches that of a pool are well suited for unit swims, particularly if a local authority provides a designated swimming area. Such areas occur along the carbonate platforms of the Florida coast where the National High Adventure Sea Base is located. The water is more likely to be turbid in small bays near the mouths of silt-laden rivers that empty into the western Gulf of Mexico.



Swimming From Boats

There are several situations when a unit, generally small in number, may consider swimming from a boat that is large enough to carry the entire group. Afternoon cruises on a pontoon boat on a local lake or a live-aboard cruise on a large sailboat are examples. Some of the best snorkeling sites are easier to reach by boat than from shore.

Safety procedures for swimming from a boat involve elements of both Safe Swim Defense and Safety Afloat. Safety Afloat requires both a qualified boat driver who meets state licensing requirments and a designated observer or lookout no less than 18 years of age. Details on Safety Afloat are provided in Chapter 13. Chapters 26 on Motorboating and 27 on Tow Sports contain additional information that leaders should review when completeing a SAFE Checklist for a boating activity that includes swimming from a vessel. Those chapters also address emergency action plans for boating activities.

Generally, swimming from a boat should be considered only when all members of the unit are classified as Scouting America swimmers. Otherwise, the group can put ashore and establish a conventional Safe Swim Defense area where everyone can participate.

Swimming from a boat under way, or whose position is maintained by a motor, is not authorized. Motors must be turned off, not simply placed in neutral, whenever persons are entering or exiting the boat to avoid hazards from propellors or water jets and carbon monoxide.

The boat should be in a fixed position, not drifting noticealbly due to wind, waves, or currents. That often means the boat should be attached to a permanent mooring bouy or anchored. The location should be free of underwater obstructions, such as submerged trees, and away from boat traffic. Ideally, the boat should be anchored in clear water less than 12 feet in depth. If clear water is over 12 feet deep, or if the water is turbid and exceeds 8 feet in depth, then swimming from a boat should only be allowed if properly fitted life jackets are worn in the water. Having everyone wear a life jacket also precludes swimming underwater, which is not allowed in turbid water.

The swimmer area may be defined as an approximate distance from the boat. Somewhere around 50 feet should be sufficient. It is not necessary to deploy anchored buoys to define the area for a small group, but the adult

supervisor should intervene if a buddy pair abuses the guidelines by continuously pushing the limits. Buddy checks can be used to regroup the swimmers closer to the boat if the group begins to disperse over too large an area. Swimmers must be keep close enough to easily hear instructions, such as the buddy check signal.

Swimmers should be able to enter and exit the water easily. That normally requires a boat equipped with a fixed or removable ladder or a swim platform. Don't neglect a plan for rescuers to bring an unconscious person aboard. Jumping feetfirst from the side of the boat should only be allowed into deep water that has been checked for obstructions.

Small swells or weak currents will swing a boat anchored from the bow to face into the direction of water movement, and will also tend to carry swimmers in the same direction. When such forces are present, the designated swimming area should be in front of the boat so that swimmers who become tired or disabled are carried toward the boat rather than away from it. The lookout would then be stationed at the bow. In addition, a long floating line should be deployed from the stern to give those swept past the boat something to grab. Swimming from boats should not be allowed in the presence of large swells and strong currents.

Swimming should be confined to only one direction away from the boat, so that a lookout on the boat can observe the entire group without turning. Ideally, neither the lookout facing the swimmers, nor swimmers facing the boat, should be facing into the sun.

Rescue personnel may be stationed on the boat or in a tender craft. They should be equipped with flotation aids and throwing devices. The distance swimmers are allowed away from the boat may need to be specified in terms of the length of the line in a throw bag. A practice drill at the start of the swim will check that the safety team and the swimmers know how to respond in the event of an emergency.

During a buddy check, swimmers need to find their buddy and tread water in position. It is not necessary to have everyone leave the water to determine if buddies are watching each other and to check the number in the water. A buddy check should also serve to remind the adult supervisor to review weather conditions. Getting everyone to a safe location during a thunderstorm will obviously take more time from an anchored boat than from a backyard pool.

At the conclusion of the swimming activity, a final buddy check is required to make sure no one is left behind and that propulsion may be safely started. The designated observor required by Safety Afloat must account for everyone in the party with a definitive head count. After the count is complete, but prior to stating the engine, or raising sails, both the designated observer and the boat operator should visually check the water around the entire perimenter of the boat.

Rescue equipment, personnel placement, emergency drills, and keeping a weather eye are elements of an emergency action plan for swimming from a boat. Emergency planning also needs to consider who handles the boat if the skipper becomes incapacitated and how to contact the nearest emergency services, such as a lake patrol,county sheriff's office, or the Coast Guard. A cell phone may be carried for emergency communication. In coastal areas, marine radios are useful.

Distance and Competitive Swimming in Open Water

Swimming long distances promotes physical fitness through exercise and conditioning. The Scouting America's **Mile Swim** recognition is one such activity. Long distances may be achieved in a pool or an established waterfront swim area by swimming laps in accordance with Safe Swim Defense policies. Scouting America has additional guidelines if the distance is covered over longer stretches outside an established swimming area:

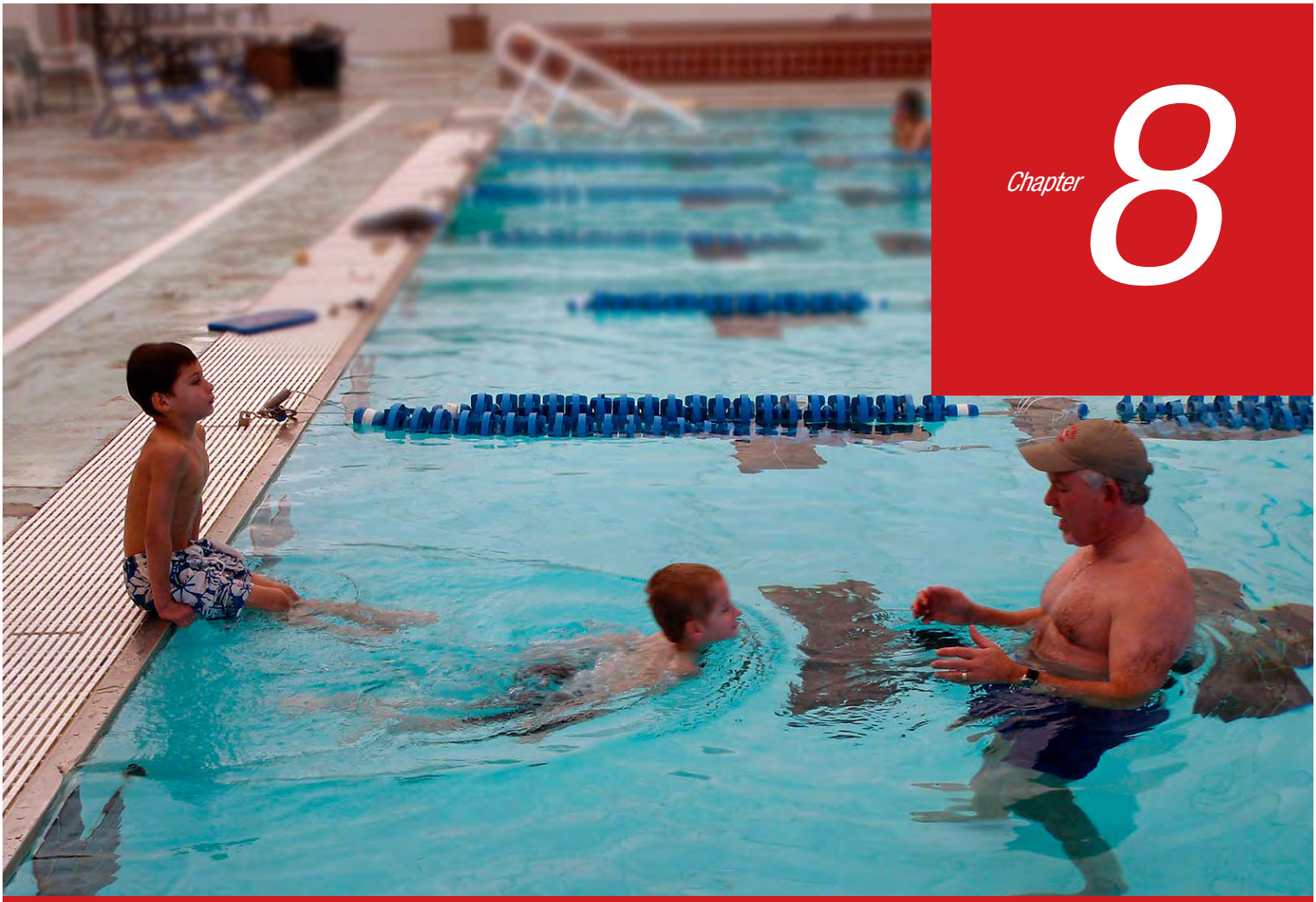
- The environment for an open-water swim must conform to Safe Swim Defense guidelines regarding hazards such as submerged trees, currents, or boat traffic, as well as water quality, depth, and clarity.
- Each individual swimmer, or at most a buddy pair, may be accompanied by a rowboat with two people onboard, one skilled in controlling the boat and the other trained in basic water rescue, equipped with a reaching device and flotation aid, continuously watching the swimmer(s).
- Alternatively, a closed circuit may be established where all swimmers are constantly in reach of safety personnel strategically positioned at fixed points on anchored boats, the shore, or piers. Each participant swims with a buddy, and the number and spacing of the swimmers in the water should not exceed the capacity of the watchers to easily count the swimmers as they move from one zone to another.
- Some competitive swimming events, such as triathlons, also cover long distances. Long-distance swimming races are not approved for Cub Scouts or Scouts BSA, but Venturers may participate in triathlon training and competitive events. All swimming activities conducted by Venturing crews must conform to Safe Swim Defense guidelines. Individual Venturers may participate in outside triathlon events sanctioned by USA Triathlon.

Recap

Safe Swim Defense defines Scouting America policies on swimming activities. Those policies offer the conscientious unit leader effective risk-management tools based on known risk factors and effective preventive measures. Limitations on certain activities should not be viewed as stumbling blocks; rather, policies and guidelines are best described as stepping-stones toward safe and enjoyable adventures.

However, every possible contingency may not be covered with a hard-and-fast rule, and rules are poor substitutes for experience. Responsible adult leaders who understand their responsibility and the risk factors addressed by various policies, can exercise discretion regarding certain procedures while maintaining safety. Some units may have the supervision, skills, experience, and equipment to engage in an activity that other units should avoid. Ultimately, individual leaders must personally decide if they are sufficiently experienced and well-informed to make the rational decisions expected of a **qualified** supervisor. Leaders are expected to utilize Scouting America's **SAFE** checklist when planning activities.

- **SUPERVISON**
- **ASSESSMENT**
- **FITNESS & SKILL**
- **EQUIPMENT & ENVIRONMENT**



Chapter 8

Learning to Swim & Water Competency

Chapter 3, *Safety First*, reviewed risk factors for drowning and the layers of protection in Safe Swim Defense to manage those risks. In particular, deep water was identified as a significant risk to those who cannot swim well. That risk is mitigated by informing Scouts, parents, and leaders of the danger posed by deep water, by teaching Scouts to swim, and by isolating poor swimmers from deep water. Those protective measures support the concept of water competency for all Scouts. This chapter addresses water competency and how it is achieved via learn-to-swim programs and activities.

Since its founding, Scouting America has considered swimming proficiency as a life skill that everyone should achieve. Proficiency was, and still is, measured by a progressive set of metrics embedded in advancement requirements and *Safe Swim Defense.* Anyone able to complete the *Beginner* swim classification is well on their way towards water competency. Those able to complete the *Swimmer* classification may be considered "adequate" or "good" swimmers. Those able to meet the requirements for Swimming merit badge may be considered "proficient" swimmers.

Regardless of the skills used to define a "competent", "good", or "proficient" swimmer, those skills must be learned, and the ability to learn is tied to age. Ideally, Scouting youth will be able to access age-appropriate courses offered by trained instructors. Scout leaders are not expected to provide that training themselves, but should understand basic progressions and local resources to aid Scouts in accessing such instruction. This chapter also reviews what Scouts, parents, and leaders should expect from learn-to-swim programs.

A single set of lessons seldom takes a person from nonswimmer to expert. Youth abilities will likely improve if opportunities to practice in recreational settings are provided. If parents are knowledgeable swimmers, they may provide useful guidance to help their children progress. Informed leaders may assist Scouts with swimming requirements for adventures and ranks. This chapter also includes basic steps for a nonswimmer of Cub Scout age to learn the skills needed to meet the Scouting America *Beginner* classification.

Public Perception of Swimming Ability

Scouts and leaders who have been in the program awhile are likely conditioned to the swim classification tests and ability groups required by Safe Swim Defense. However, those new to Scouting aquatics activities may not appreciate the need. The public at large, including some Scouts and their parents, often under estimate risks and over estimate swimming abilities.

Around 85 % (17 of every 20) adults in the U.S. self-reported that they knew how to swim in two surveys. However, the true number of those able to safely swim in deep water is likely below 50 %. In a 2020 survey by the American Red Cross, 85% of adults initially stated they could swim, but only 48 % reported that they could perform basic skills such as entering deep water and swimming 75 feet. Only 32 % of adults in a 2023 CDC survey reported they could swim in water over their heads.

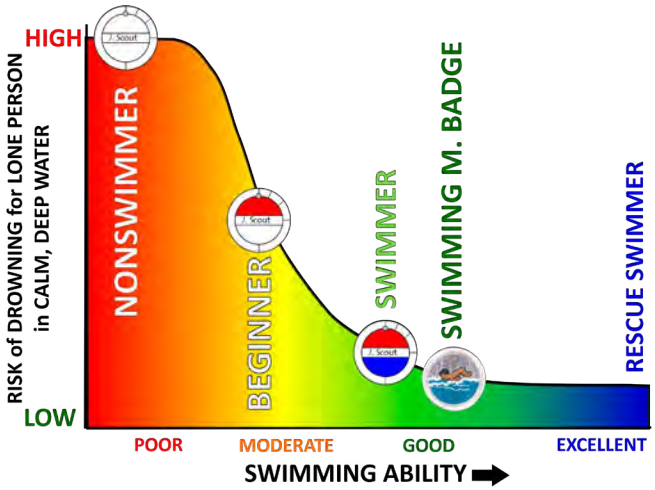
Misconceptions by adults of their own swimming abilities are likely transferred to their children's abilities. That is, parents who watch their children have fun playing in a shallow backyard pool, particularly youth who have completed rudimentary swim lessons, may not appreciate the danger when those same children step over a shelf into deep water in a lake. Unfortunately, many children who begin learn-to-swim programs drop out prior to achieving water competency and few public swimming venues impose depth restrictions based on swim tests.

Water Competency: overview

Water Safety USA defines water competency as the ability to anticipate, avoid, and survive common drowning situations, as well as being able to recognize and provide assistance to those in need. It includes water safety awareness, basic swimming skills, and helping others. Although the concept is simple, the details are more involved and somewhat subjective. Two diagrams help explain how risk varies with skill and awareness.

The vertical axis on the first graph shows the relative drowning risk, from low to high, for a person alone and unsupervised in calm, deep water. The horizontal axis represents swimming ability, from none to that of a U.S. Coast Guard rescue swimmer.

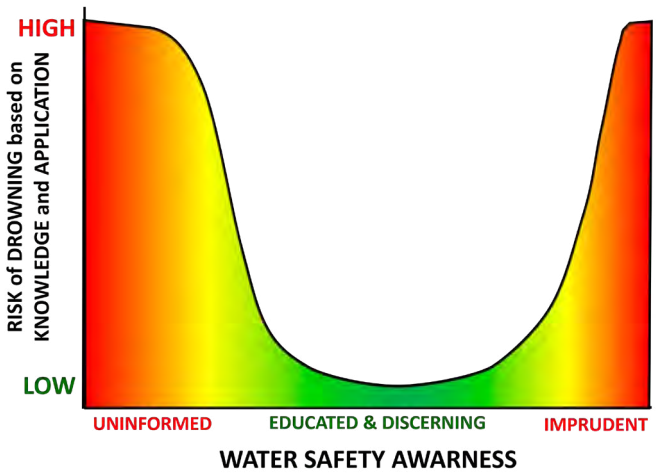
Nonswimmers, that is those who have never maintained themselves in water too deep to stand, are always at high risk of drowning when they are unsupported in deep water for whatever reason. Nonswimmers of all ages are almost always unable to move even a few feet to safety and unable to call for help. However, it takes very little training and experience to significantly reduce the risk posed by deep water.



Those able to jump into deep water, level off, turn, and swim for short distances, as in the Scout *Beginner* classification, are reasonably safe in small areas with deep water, but perhaps not able to move over longer distances without becoming exhausted and therefore at risk. The ability to perform a restful stroke over longer times and distances, as in the Scout *Swimmer* classification further reduces risk. Once a person gains the ability to perform a variety of strokes at relaxed rates, as in Swimming merit badge, the risk levels off, but does not go to zero. Even the most skilled swimmer can still drown under safe conditions if incapacitated by injury or other medical emergency such as a stroke or sudden cardiac arrest.

Note that the graph purposely invoked a safe area as defined by *Safe Swim Defense*. Those with skills represented by Swimming merit badge will be more likely to handle river currents, rip currents, and some flood situations better than a *Beginner*. However, they are very unlikely to handle such conditions, including high seas in cold water, as well as a rescue swimmer. That is, the skills needed for water competency depend on the environment.

The second diagram relates drowning risk to knowledge and application, also known as "water smarts". Non-swimmers not aware of the danger posed by a drop off are at higher risk than nonswimmers who understand their limitations and carefully stay in shallow water. Decent swimmers who observe beach warning signs to avoid rip currents are likewise applying knowledge they have acquired to reduce risk.



However, knowledge by itself may not be sufficient. A study suggests that up to 25 % of all drownings, both fatal and non-fatal, involve some degree of deliberate risk taking. Teenagers reacting to peer pressure may attempt a swim to a distant island in a large river even though they have never before swum that far, or in a current. Hence the upswing in risk to the right on the graph. A good swimmer well aware of the risks may nevertheless decide to dive headfirst from a cliff into a turbulent river. There is an adage among whitewater kayakers that those most in peril are novice boaters and the highly skilled. Experts who embrace the extreme aspects of the sport carefully assess and prepare for risks they clearly understand, but still attempt hazardous first descents of 100 foot waterfalls. A goal of water competency is to educate swimmers to common risks, provide them with ways to mitigate those risks, and inspire them to act safely. Learn-to-swim programs should include age-appropriate safety education along with skill instruction.

Although a primary goal of water competency is to prevent drowning, water competency also includes the ability to recognize and assist others in need, along with understanding the risks of doing so. The risks associated with water rescue depend on the situation and the swimming skills of the rescuer. Many learn-to-swim programs cover reaching and throwing rescues from shore appropriate for those with developing swimming skills. However, those skills may not be sufficient for common drowning situations. Ideally, parents who supervise young children at home, apartment, or hotel pools should have enough water competency skills to quickly and safely recover their child from the bottom of the pool, remove them from the water, and perform CPR while waiting for EMS. Water rescue skills are covered in detail in Chapter 10.

Water Competency: skill assessment

It should be evident that the skills and knowledge needed to anticipate, avoid, and survive common drowning situations depend on the type and location of the swimming activity. However, a specific set of minimum skills is useful for parents and leaders to measure when a youth is likely ready to participate safely in a given activity. Tragedies have occurred when parents have assumed their child was safe in the water after completing swimming lessons that were only meant to impart introductory skills for shallow water.

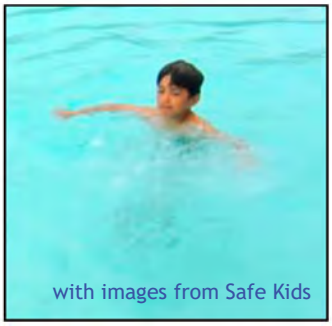
For over a century, Scouting America has successfully relied on its *Swimmer* classification, along with an understanding and application of the other layers of protection of its *Safe Swim Defense* plan, as a working measure of water competency. Additional swimming skills are required for more advanced programs such as Lifesaving merit badge, snorkeling, and scuba diving. See Chapter 5 for a detailed discussion of how to interpret and administer the *Swimmer* test.

Swimmers:

- **Jump into deep water.**
- **Swim 75 yards with strong stroke(s),**
- **include a sharp turn, then continue**
- **with restful backstroke for 25 yards.**
- **Rest by floating.**

The American Red Cross advocates a different metric for water competency skills:

Enter deep water and submerge



Float or tread for one minute, turn 360º

Move at least 25 yards on front or back

Exit the water

Note that the American Red Cross version is similar to Scouting America's *Beginner* classification. Both include the ability to enter deep water, shift from vertical to horizontal, turn, and travel distances compatible with most residential pools. Data suggest that drownings in the US would be reduced significantly (25% to 50%, or even more) if everyone in the U.S. reached this level of water competency. It therefore sets a reasonable minimum expectation for learn-to-swim programs. Parents should encourage children to continue lessons until at least reaching this level and consider restricting their in-water activities to shallow water until they do.

Using the Red Cross qualifications, or the *Beginner* test, as a measure means a "competent" swimmer is not necessarily a "good" swimmer. Neither set of requirements specify how the distance is covered. Presumably, a person could use a dog paddle, an inefficient, head-up crawl, or other poorly executed stroke. That in turn implies the person could become so exhausted over the set distance that they could not continue much further. If so, the person is reasonably safe in a deep water area smaller than the required distance, and ideally can use that area to practice and improve skills. Either measure, or something similar, is appropriate as a swim test for facilities and programs that implement swimming tests prior to allowing patrons into confined deep water. However, that does not necessarily mean the person is ready to swim in waves, either at a large wave pool or the ocean, or ready to snorkel in open water from a boat.

Preschool swim instruction with a focus on the human stroke imparts safety skills but is only a start.

Ideally, learn-to-swim programs incorporating water competency concepts will provide sufficient training and practice for learners reaching that stage to be well on their way to executing one or more reasonably efficient strokes. If so, little additional instruction and practice may take that person from a *Beginner* to a *Swimmer* level. Parents and leaders should be aware of the difference in skill level and encourage training until the youth becomes proficient in a least the crawl and one or more restful strokes. Hence the elective requirement to attempt the *Swimmer* test for Webelos and the requirement to complete the *Swimmer* test for First Class Scouts.



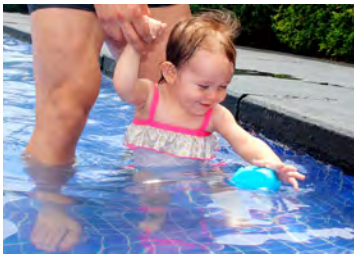
Definitions of "competent" may indicate "adequate" rather than "good" skills.



"Good" swimmers should efficiently execute multiple strokes over long distances.

Water Competency: levels of protection

Parents and leaders should always remember that swimming skill is only one layer of protection for swimming activities. Water Competency skills are closely associated with *Ability Groups* in Safe Swim Defense. Safety awareness concepts included in Water Competency are reinforced via *Qualified Supervision* and *Discipline*. All swimmers need to be in *Safe Areas*. Safe areas for poor swimmers include restricted access to deep water. *Buddies*, *Response Personnel*, and *Lookouts* provide additional safeguards. Activities are adjusted as needed to mitigate risks implied by individual health conditions.



Poor or untested swimmers should be restricted to shallow water.

Safe Swim Defense guidelines advocate use of life jackets for swimmers of all ability levels as an extra layer of protection in some situations, such as a river with a mild current or when the water is too deep for rescuers to easily reach the bottom. Some water safety advocates suggest that poor swimmers should wear life jackets at all times when in or near the water. While that adds an extra layer of protection, it does not substitute adequately for either water competency or supervision. Poor swimmers left momentarily unsupervised can slip out of their life jackets, enter deep water, and immediately start the drowning process.

If poor swimmers are properly supervised and restricted to shallow water, then the extra protection provided by a life jacket is often not essential for safety. That also means the poor swimmer can practice and improve skills which would be hampered by life jacket wear.

Life jackets provide protection, but are not essential for safety.

Learn-to-Swim Programs

Learn-to-swim programs are available from a variety of sources including municipal pools, recreational centers, YMCAs, schools, and private instructors. Some Scouting America day and resident camps for Cub Scouts offer lessons as part of their program. Almost all Scout BSA camps for older youth offer lessons tied to swimming requirements for rank advancement. This section provides parents and leaders with information for selecting and evaluating learn-to-swim programs. Additional information is available on the Water Safety USA website.

Age considerations

Anyone can begin their journey to water competency and proficiency at just about any age once they are old enough to turn and raise their heads out of the water sufficiently to breathe. The extent to which infants, toddlers, and preschoolers can learn skills that perceptibly reduce drowning risk depends more on individual development, and somewhat on the instructor, rather than a fixed age. A parent's decision of when to start swim lessons for young children should be based on various factors including the child's development, exposure to water, and access to age appropriate learn-to-swim programs.

Water orientation programs conducted by trained instructors working closely with parents may safely introduce infants less than a year old to warm, sanitized pool water. The infant's first interaction with the water may be pleasant or stressful, and involve more reflexive rather than learned behavior.

Toddlers age 1 to 3 are undergoing rapid, significant growth in physical and mental capabilities and can do amazing things in the water with appropriate supervision, such as turning on their backs to breathe or moving through the water using a stroke, float, breathe, stroke sequence. However, they are unlikely to progress to water competency skills of independently entering deep water, orienting themselves, leveling off, swimming across a pool, and exiting. They are also unlikely to understand and avoid risks. Therefore, toddlers should always be within arm's reach of an adult, known as "touch supervision".

The ability of lessons for this age to reduce drowning risk may depend more on parent water safety education than on toddler skill acquisition. Claims that lessons for children 1 to 4 years of age reduce drowning risk by 88 % are suspect since the authors report that limited data indicate a range in risk reduction from 3 % to 99 %, even if all the other statistical assumptions are correct.

According to the American Academy of Pediatrics, children at age 4 can usually learn basic skills such as floating, threading water, and reaching an exit. By age 5 or 6, most children in learn-to-swim programs can master the front crawl. Therefore, Cub Scout age is a good time to begin learn-to-swim programs, particularly during summer transitions from Lions to Tigers, and Tigers to Wolf, That is, between kindergarten and first grade, or first and second grade. Note that Cub Scouts from Lions through Arrow of Light can earn elective swimming adventures by taking swimming lessons.

If children or their parents do not learn to swim during their early school years, it is never too late to enroll in lessons at any age. Some age eleven, twelve, or older youth may simply have never had the opportunity for swim lessons prior to attending a Scout resident camp. Those youth will be well-served by swim lessons at camp tailored to their abilities and promoted as a way to meet Second Class requirements. Some will be able to complete the *Beginner* classification test by the end of the week, particularly if they are not apprehensive of the water.

Regardless of when a child begins learning how to swim, it is important for them to stay with it until at least achieving minium water competency. A survey of 147 swim schools serving over a million students indicated that 65 % who began lessons left the program prior to gaining the ability to swim 25 to 50 yards. A nine-year-old non-swimmer may reach that skill level with an hour of instruction a day over five days. A three-year-old taking one multi-lesson session a year may need several years to reach the same skill level.

Parents need not feel regretful if they are unable to enroll their toddlers in lessons due to a lack of opportunities in their area or lack of funds. They should, however, educate themselves on and apply other layers of protection to reduce drowning hazards for this at-risk age group, and actively pursue lessons as the children age.

Program formats and skill levels

This section is a composite of various learn-to-swim programs with representative labels. Lesson providers should provide parents with detailed skill descriptions for each level. Parents should always be invited to watch the instruction.

Infants & Toddlers
6 months to 3 years

Child & Parent Water Orientation

Discovery, Comfort	Exploration, Movement

Courses for infants and toddlers are mainly designed to orient the child to the water, perhaps including a stroke, float, breathe, stroke sequence to sustain movement through the water for a short time. However, that ability should not be considered as water competency. Some providers require an adult to accompany each child in the water and teach parents support techniques since the child can seldom stand in water depths used for instruction. Other providers prefer the instructor to work one-on-one with the child while the parent watches from a distance. Lessons are typically frequent and short. Infants and toddlers should never be in the water beyond easy reach of an instructor or parent during lessons and of a qualified water watcher during recreational activities.

Preschool
~3 years to 5 years

Preschool Water Familiarization & Basic Skills

Orientation, Acclimation	Movement, Locomotion	Assimilation, Endurance

Course progressions for preschoolers vary by the provider but typically include three levels that stop just short of minimum water competency. In an ideal situation, one level would closely follow another. However, often only one level is completed during a season. That means several years may be needed for a nonswimmer to acquire basic water skills in water no more than shoulder deep.

Learn-to-swim providers typically support a smooth transition between preschool and school age programs. Those completing the three preschool levels, at whatever age, are likely ready to gain minimum water competency in deep water at the conclusion of the next appropriate level in the school age progression. A common difference between preschool and school age instruction is the amount of physical support (holding) provided by the instructor.

School Age
~5 years and older

Learn-to-Swim Water Competency & Stroke Development

Orientation, Acclimation	Movement, Locomotion	Stroke Introduction
Stroke Improvement	Stroke Refinement	Specialized Tracks

Course content for the first few levels for primary school children is similar to that for preschoolers. Instructors should first determine the appropriate level to begin or continue with each child. Children of this age can typically progress more rapidly than their younger counterparts. However, it may still take multiple seasons to achieve basic water competency. Gaining water proficiency will take longer. Unfortunately, many children discontinue lessons prior to reaching those levels.

The same progressions are used for teens and adults. Older students can often progress rapidly. However, anyone who is afraid of the water will benefit from one-on-one classes by a patient, experienced instructor.

Nonswimmer Instruction

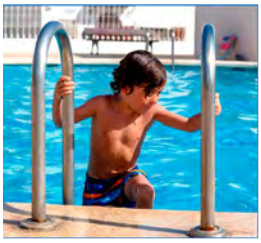
Safe Swim Defense is easier to administer if everyone in the unit is a good swimmer, as defined by the Scouting America swimmer classification test. Also, nonswimmers and beginners lack recreational and advancement opportunities until their swimming skills improve. Scouting strives to safely provide those opportunities to everyone.

One recognized means to improve swimming ability is to enroll Scouts in classes taught by experienced swimming instructors. A den is well served if the den leader can arrange swimming lessons for the group. That will automatically allow the Cub Scouts to complete the associated elective Adventure. Scouts attending summer camp are typically provided swimming instruction at all levels.

However, for various reasons, such options are not always available on a timely basis. Also, studies indicate that youth can improve swimming skills between seasonal lessons if they are provided opportunities to practice. Unit leaders and parents who are good swimmers experienced in dealing with youth can advance the learning process with a little guidance. Also, sometimes the best instructor is someone the child knows and trusts—e.g., a parent, working one-on-one—as opposed to a strange adult in the midst of equally unfamiliar, and perhaps insensitive, peers.

The following material outlines a step-by-step process to teach the skills required for a school age child to advance from nonswimmer to beginner. The progression assumes the youth is mature enough to master the crawl stroke. It also assumes a teaching area with water depths waist to chest deep with a gradual slope to deeper water. Ideally, water and air temperature should be around 80 degrees or more.

Learn-to-Swim Progression: Nonswimmer to Beginner



Enter / Exit

Acclimation

Breath Control

Buoyancy

Back Float

Prone Float / Glide

Flutter Kick

Arm Motion

Coordination

Deep Water Skills

The same steps are applicable to just about everyone, regardless of age or comfort level in the water. However, both those factors will influence instructional details and how quickly the person will progress. Attention spans and motivations for a 6 year old are different from those of a 16 year old just learning to swim. The first benefits from games the second might find insulting. The first may expect to be held in the water, whereas the second may shy away from physical contact. However, the same progression of skills is essential to both.

Some learn-to-swim programs for school age children allow six to ten pupils per instructor and conduct activities using an assembly line approach. Suggested ratios for a parent or leader coaching nonswimmers is one-to-two or one-to-one. Teaching two Scouts of similar ability together introduces the buddy system as a basic safety rule, and the companionship should make the learning process more pleasurable. On the other hand, a youth who is afraid of the water may progress better working alone with the instructor.

The time it takes to progress through the steps probably depends more on comfort level in the water than on age. Both a 6 year old and the 16 year old should progress rapidly if they are already comfortable in the water. The first few steps establish that comfort level, and in some cases may quickly be set aside. A few hours may be all it takes to improve enough to complete the beginner test. However, it may take those who fear the water several sessions to move away from the side and put their face in the water.

The initial stages should not be rushed. Learners should be encouraged to progress at their own pace according to their abilities, not those of someone else in a class. Any time a pupil is reluctant to try something new, the instructor should consider backing up a step. Patience is required to teach children to swim, particularly those apprehensive of the water.

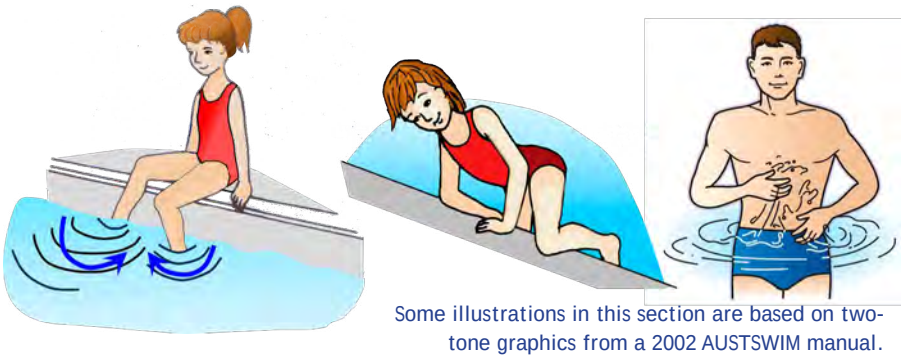
A conscientious and understanding adult comfortable in the water can use the following steps to teach basic swimming skills. When introducing a new skill, the instructor should explain the procedure as simply as possible, demonstrate the skill, and then have the buddies try it, either one at a time or together as appropriate. At the start of any new period of instruction, participants should be asked to review the skills they learned during the previous session.

The steps are arranged in a logical progression. Breath control is necessary for floating face down. The ability to swim in shallow water precedes teaching entries into deep water. However, flexibility is allowed. Some steps can be interchanged, expanded, or contracted to meet the needs of the student. For example, the prone float may follow the face-down jelly fish float rather than the back float.

Explain - Demonstrate - Practice -Review

Over the decades, Scouting America has promoted various techniques to effectively teach various skills. Examples include KISMIF (Keep It Simple, Make It Fun), PPPPPP (the Six P's: Proper Prior Planning Prevents Poor Performance), the Coach-Pupil Method, Guided Discovery, and, more recently, EDGE. EDGE stands for Explain, Demonstrate, Guide, and Enable. A similar progression, Explain, Demonstrate, Practice, Review has long been used in Scouting to foster learning of aquatic skills. It is particularly effective when the review is conducted by the Scouts themselves. Each of the techniques has strengths and potential shortcomings, but all strive to create an environment for learning to occur. Ideally, parents and leaders teaching swimming skills will have experience in teaching skills to youth. A few tips on how to teach are included in this manual, but other resources may be of use. For example, the Aquatics Staff Guide for Scouting America summer camp staff.

1. Acclimation, Orientation, and Adjustment to Water: Entries & Exits



Some illustrations in this section are based on two-tone graphics from a 2002 AUSTSWIM manual.

Although many nonswimmers will be ready to enter the water immediately to begin playing and learning, some will be timid or cautious, particularly on the first day or if the water is cool, or unfamiliar. For this reason and to minimize physical discomfort, the initial adjustment process should be gradual and deliberate. (After the first session, the adjustment routine may be quicker and more spontaneous.) The instructor should begin the first instructional period by entering shallow water and facing participants seated on the pool's edge with their feet dangled in the water. If the participants can easily reach the water, they should imitate the instructor to dip, splash, and rub water on their necks, faces, arms, and upper bodies. This exercise should let the instructor quickly identify those who are uneasy and may need special assistance in overcoming reluctance to enter the water.

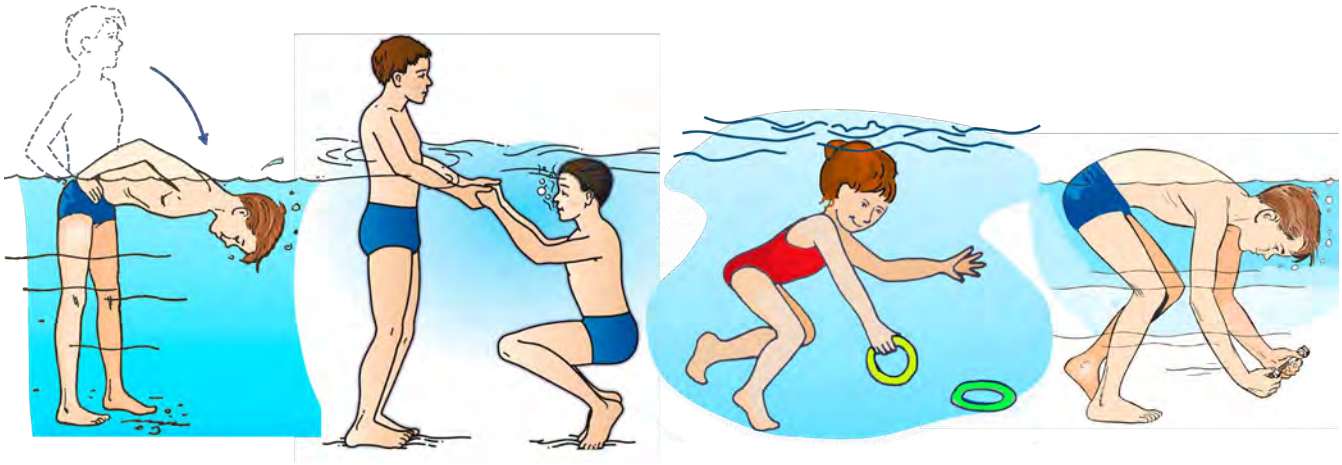
Participants should then coached on entering the water, preferably using a slide-in entry. However, steps and ladders may also be used.

If the instructional area is not a pool, the nature of the bottom should be carefully explained before learners are asked to enter the water. A reassuring comment on turbid or discolored water is also important.

Next,have the learners walk along the edge of the pool to build and gauge their comfort level. If they are reluctant to let go of the side, encourage them to gradually move away from the edge by walking forward, backwards, and sideways, perhaps with little steps, then big steps, then hops.

If pupils appear willing and enthusiastic, this opening exercise may advance quickly to the next step. If the instructor feels more conditioning is needed, then exits should be introduced and various games used to encourage movement through the water without yet putting faces below the surface. For example, bouncing a beach ball back and forth, or blowing a toy sailboat across the pool.

2. Breath Control



Breath control is a critical swimming skill—when to hold the breath and how to inhale and exhale. Have the learner stand in waist-deep water with feet somewhat apart, take one breath, duck head under, and hold for a few seconds: however long is comfortable. Then raise the head back up, exhale, and take another breath. Repeat holding the breath several times. Eyes may be shut initially, but after a few repetitions, encourage pupils to open their eyes underwater to look at their feet. (Goggles may be used if eye irritation is a problem, but eventually water competency skills should be performed without them.)

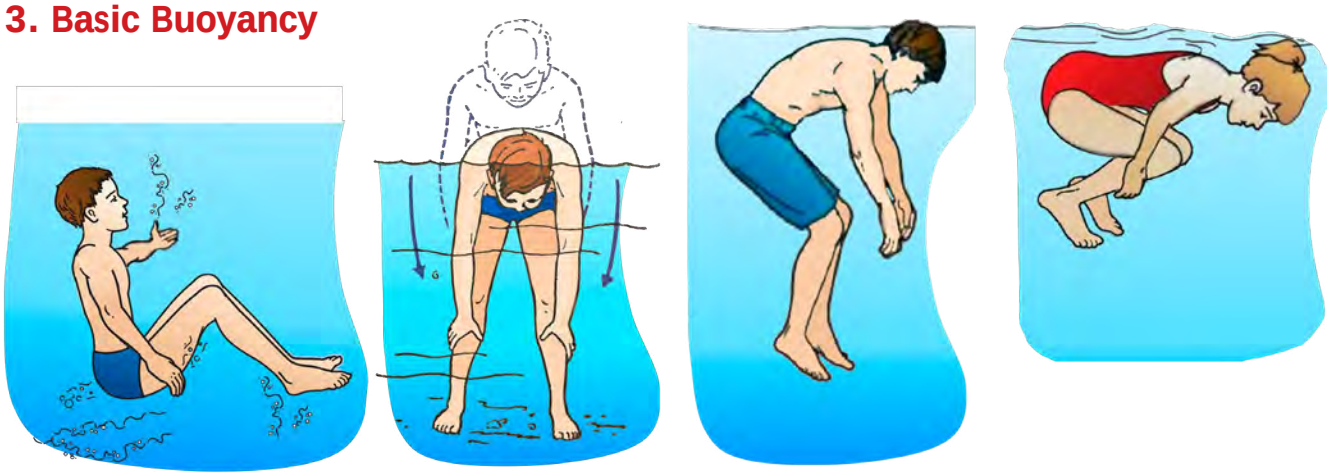
Next, buddies, or a pupil and instructor, may practice the seesaw in chest-deep water. They join hands and face each other. One buddy takes a breath, squats below the surface, and remains there for a short count (2 to 3 seconds) while the other buddy remains standing. As the first buddy comes up, the other goes down. This continues in a rhythmic pattern. Repeat until participants are able to do so 10 to 12 times without stopping.

Pupils may also be asked to retrieve dive rings, coins, or other objects from the bottom. That prompts them to open their eyes and concentrate on the task rather than holding their breath. Older students may find it more challenging to thread a nut on a large bolt.

Depending on their previous experience, learners may automatically blow bubbles through their nose and/or mouth rather than holding their breath. That is fine at this stage but not necessary. Buoyancy for the various floats is improved if the breath is held rather than expelled. Exhaling underwater will be emphasized when learning the arm motion for the front crawl. However, many learn-to-swim provider lesson plans introduce exhaling under water at this point in the progression.

Those who are afraid of the water may not be comfortable putting their face into the water even briefly. Instructors should be extremely patient with such learners and not expect reason to overcome fear. One way to proceed is to have pupils first try to duck their head into a basin of water setting on a table. If that doesn't work, it may be appropriate for the parent or leader to seek guidance from an experienced, qualified learn-to-swim provider. However, finding such an instructor may take some effort. A seventeen year old who has just completed instructor training prior to conducting group lessons at a city pool may or may not have the necessary empathy and expertise.

3. Basic Buoyancy

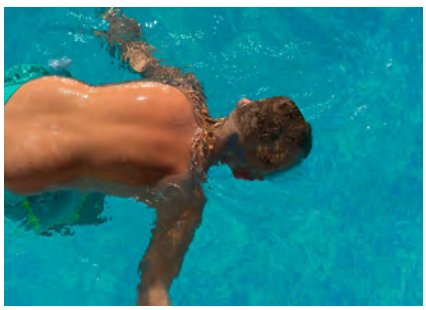


An introduction to buoyancy lends itself to a Guided Discovery exercise. Simply ask students standing in chest deep water to take a breath, hold it, and try to sit on the bottom. Most will have difficulty doing so. Point out the reason: people tend to float and that helps them swim. Next, guide the students through variations in a face down float.

To do a jellyfish float, take a breath and hold it. Bend forward at the waist to put the face in the water. Slide hands down the legs toward the ankles and flex the knees slightly to raise the feet off the bottom. The back should rise near or above the surface. The arms and legs hanging down are like tentacles, hence the name. Instruct the students to relax and float for a count of 10 or so. Stand up to recover by dropping the feet and raising the head.

To do a tuck float, start the same as for the jellyfish float but lift the legs to bring knees close to the chest. Then grasp the legs. Hold long enough for the body to quit rising. Let go of the legs and stand up to recover. This float is also known as a turtle or mushroom float.

These skills as presented, along with most of the others in this section, are "independent" rather than "assisted". That is, they are performed individually by the nonswimmer rather than with support provided by the instructor. That is appropriate for the age five and older youth targeted by this section. Preschoolers are more likely to need support. Lesson plan progressions for that age group may be different.

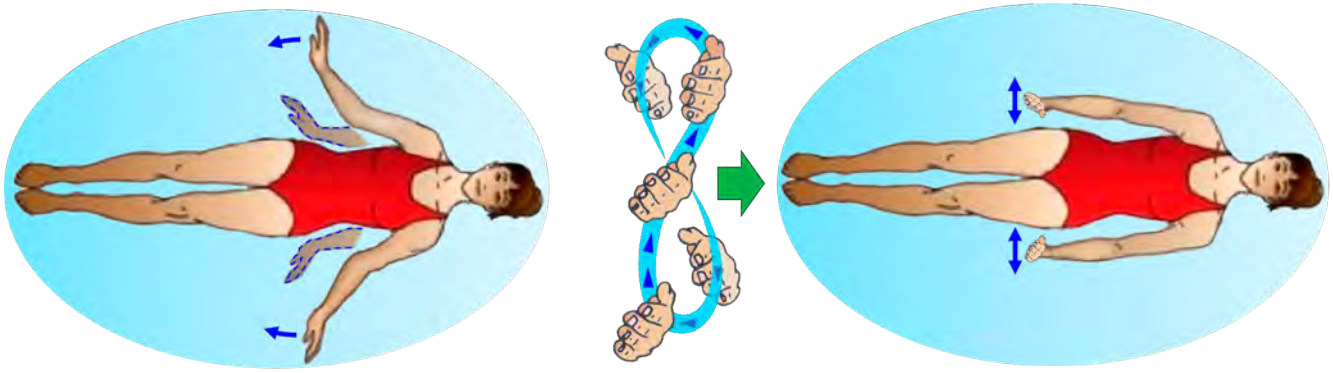


4. Back Float, Glide, Finning / Sculling

The instructor demonstrates the back float in waist-deep water by squatting down as if to sit on a chair. When the shoulders are just below the surface, the instructor extends the arms to the side just below the surface with the palms up. Next, the instructor takes a deep breath and tilts the head well back with the chin up and the ears in the water. The legs are slowly extended and relaxed as the body bobs and settles into a natural floating position with the arms extended to the side or above the head. (Some will float high on the water with hips and legs near the surface; others will float with only their face and portions of their chests breaking the surface.) The demonstration should include an easy recovery to the standing position. Drop the feet and bend at the hip. Sweep the arms down while lifting the head.

Participants should progress to independently float on their backs as demonstrated. However, it they have difficulty at first, the instructor may provide physical support to alleviate a natural insecurity about falling backward, particularly if water washes across the face. One or two hands supporting the back as the pupil lays on the water may be the key to success. Once the participant has relaxed and is floating, the support may be gently withdrawn.

After participants have learned the back float, they can proceed to a back glide. Have them squat down and lean back with arms out, as if beginning the back float, and then push off gently with the feet as the arms are swept towards the hips with palms in. The glide position is with the hands at the side. Watch the position of the participant's head. If it is too far back, water may wash over the face. A raised head will cause the body to sink.



Students at this stage will likely explore using their hands as flippers to provide stability and propulsion. The instructor can aid that effort by introducing finning and sculling. Both will be used later to assist with treading water.

During finning, the wrists are flexed and used to push water toward the feet using short, flapping strokes with the arms along the sides. When combined with the back glide, the student can independently move slowly through the water for reasonable distances.

To scull headfirst while floating on the back, the arms are along the sides with the hands initially away from the hips. The elbows are bent slightly to allow the fingertips to point upwards with the palms facing the feet. The wrists are rotated about 45 degrees with the thumbs angled toward the head. The hands are then moved sideways to the hips. At that point, the wrists are rotated 45 degrees in the opposite direction (thumbs angled toward the feet) and moved outwards from the hips. That is, the hands move repeatedly towards and then away from the hips in a figure eight pattern. The procedure is easier to demonstrate than to explain verbally.

What Skills to Teach, When

A challenge facing all swimming instructors is to know when to progress to a new skill, when to backtrack to improve performance, when to cut a session short to begin fresh on another day, and when to deviate from a lesson plan to adapt to the needs of the student. A review of the back float helps address that challenge.

Mastery of the back float has several desired outcomes:

- To build confidence in the support provided by the water
- To foster a relaxed breathing pattern
- To build an understanding of how different actions influence movement in the water
- To promote an important survival skill, and
- To provide a stepping stone for stroke development

At this stage of the suggested progression, the first two take precedence. If trying the back float leads to frustration and apprehension, then revisiting the earlier water acclimation skills is likely in order.

The back glide, abetted by finning and/or sculling, provides a first introduction to moving through the water without support. However, it is just the beginning of that critical development. There is no need to demand covering a set distance efficiently before moving on to the next step.

Being able to perform a relaxed float for long periods in warm, calm water is often considered an important component of water competency. However, that skill can be developed progressively rather than once and done. There is no need at this stage to cover in detail how placement of the hands affects the center of buoyancy, why some people float horizontally while others float vertically, etc. In this progression, that information is covered as a deep water skill. At this stage, floating with a bit of hand or leg motion for a few seconds is likely sufficient so long as the person is reasonably comfortable in the water.

Some learn-to-swim providers take the opportunity at this stage to introduce the flutter kick and the arm motion of the back crawl. That is, they simultaneously start development of the back crawl along with the front crawl. Both strokes are then refined in subsequent course levels. However, that may arguably delay acquisition of basic water competency skills to focus on a stroke that involves somewhat awkward arm motions and is mainly used in competition rather than recreation. (Remember: Keep It Simple.)

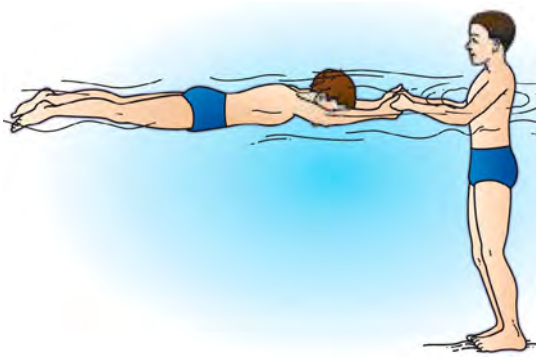
A premise of the *Nonswimmer*-to-*Beginner* progression presented here is that the next logical stroke to introduce after the crawl is the restful elementary backstroke. That is, to next concentrate on the progression from *Beginner* to *Swimmer*. The Back Float, Glide, Finning/Sculling content is a reasonable precursor to the elementary backstroke.

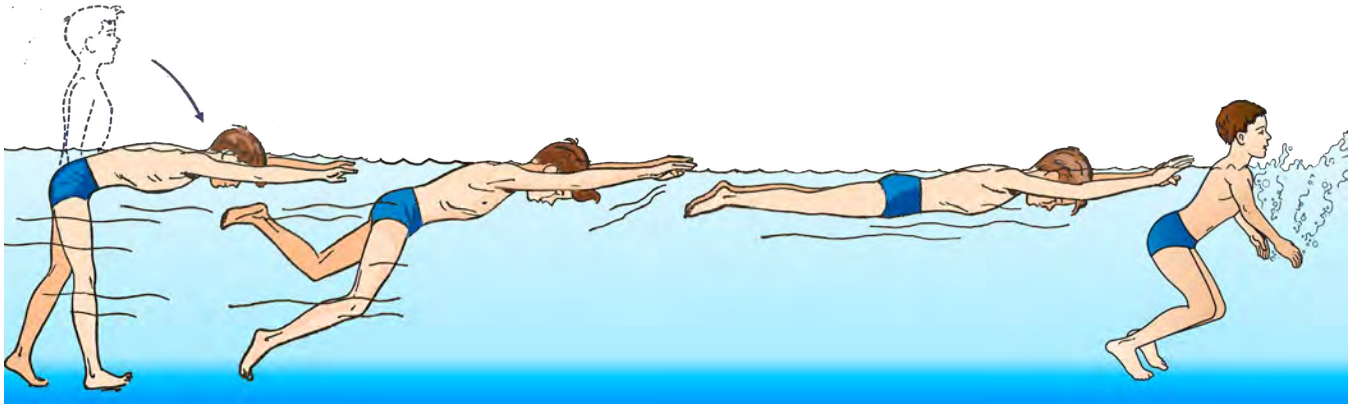
Note that the challenge of what to teach, when, is easier with the 1 : 2 or 1 : 1 instructor to pupil ratios assumed for this progression. Instructors working with six to ten participants almost invariably have to teach to the middle. Parents whose children have completed such instruction may find this material useful to supplement their child's training after the formal classes have concluded.

If a Scout is comfortable playing in shallow water, then Steps 1-4 may be covered in one 45 minute session, particularly if the Scout has already completed one or more stages of formal preschool lessons. Steps 5-9 may be introduced in a second 45 minute session and polished as needed in two more sessions. By the end of the forth session, the Scout may well be ready to jump into deep water. A fifth session can be devoted to completing the Beginner's classification. That would be an ideal result in a summer camp lesson plan for nonswimmer instruction. Note however that every Scout is different and may well progress at a different rate.

5. Prone Float and Glide

The prone float may be learned either holding to the side of a pool at arm's length or holding the hands of a buddy standing in waist to chest deep water. Buddies face each other while holding hands with extended arms. One buddy takes a deep breath, puts their face in the water, and then eases the legs back and straight behind until the body is extended and relaxed. After a few seconds in this position, the hands are released and the floater recovers their footing by pulling the knees forward, pressing the hands down, and lifting the head. The recovery should be slow and easy. Practice until both buddies are comfortable holding the float for several seconds.

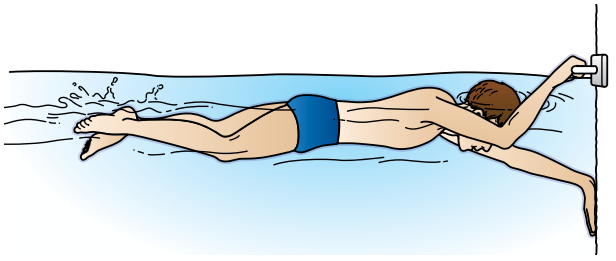




The next step is to demonstrate and practice plunging and coasting (the prone glide). This skill is nothing more than a moving prone float. The instructor should first demonstrate the skill, including a proper recovery to the standing position. In waist-deep water, have the participants squat slightly and lean forward with arms extended and hands together. They should take a breath, place their faces in the water, and push forward off the bottom. (Be sure to have participants push toward or across shallow water, not toward deep water.) Practice until each buddy can glide comfortably for over a body length. One glide can follow another to cross the pool in shallow water.

6. Flutter Kick

Demonstrate the flutter kick in a prone position while holding onto the side of the pool. A ladder may provide a good anchor if the pool edge is difficult to grasp. Keep the toes slightly pointed, the ankles and knees relaxed and kick from the hips. Kick deliberately, but slowly and fluidly.

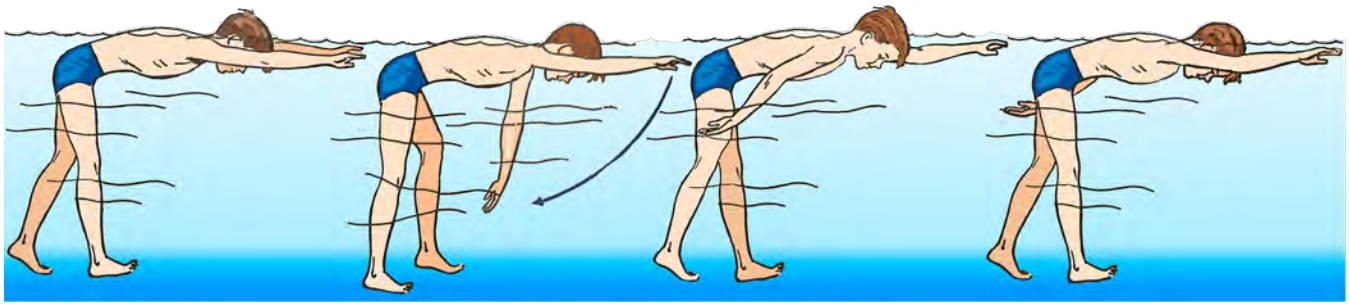


Once the participants learn the general motion, a good way to practice is with the prone glide. Have pupils begin their glide and then add the flutter kick. Challenge each buddy to go farther than the time before on a single breath. Emphasize rhythm and distance, not speed. Also caution against holding the breath long enough to become uncomfortable. Some pupils chop when they kick, bending the leg at the knee. Others will kick with the feet leaving the water. Stress kicking from the hip with the legs underwater.

Avoid drills that encourage participants to kick willy-nilly to create a large splash. Those can lead to excessive knee bending and kicking above the water. Having participants sitting or laying on the deck with legs extended over the water is probably not as effective as having the entire body in the water supported in a prone position.

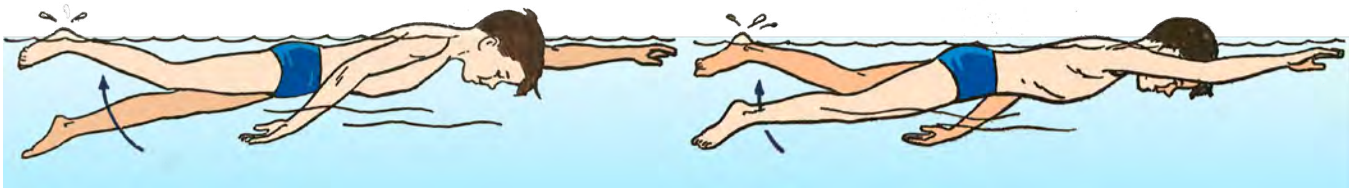
Some pupils may scoot a body length or more on one sensible breath. Others may barely move after the momentum from the glide is expended. At this stage, only slight forward movement with the kick is acceptable. The flutter kick is not particularly efficient or powerful. If problems occur, such as moving backwards, a kick board, ideally with the head down, may be used to help refine the kick. Further kick adjustments may be made after the arm motion and rhythmic breathing are added.

7. Arm Movement

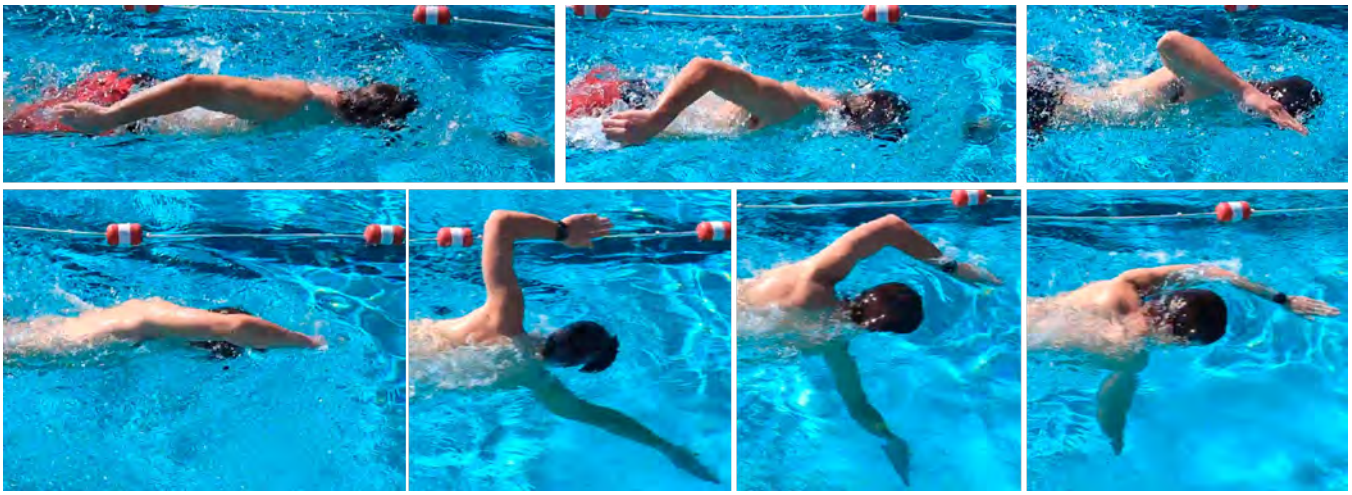


The arm pull is first demonstrated and practiced while standing, and then added to the prone glide. Have participants stand in chest-deep water and bend forward at the waist with both arms extended. Leave one arm forward and rotate the other down the center line of the body. The elbow is bent slightly so that both the hand and forearm push against the water. As the hand nears the thigh, the arm is lifted with the shoulder while the elbow is bent. The elbow clears the water first and stays above the hand. As the hand reaches forward, it enters the water fingers first a bit before full extension brings the arm back to the starting position.

The exercise is then repeated individually with the other arm. After the basic motion is mastered, the extended arm can begin the pull as the other recovers. The speed of the hand pulling through the water may be increased as the student develops a rhythm with the arms moving in opposition. The extra power generated by pulling forcefully may make it difficult to hold position, so the student may wish to walk forward while doing the rotations.

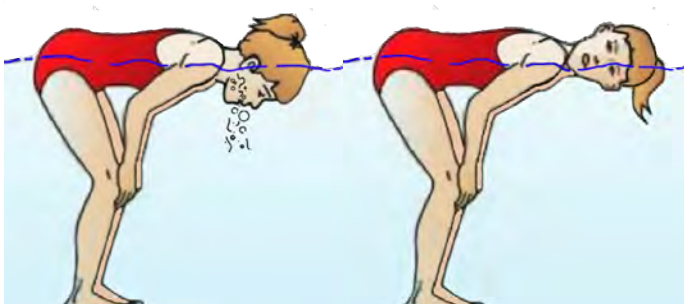


After getting the feel of the stroke while standing and/or walking, the next step is to add the arm stroke to the prone glide, with or without a kick. At this stage, the arm stroke is practiced in a face down position. Lifting the head up to breathe will disrupt the desired body position, so the student should stop at the end of a normal breath-holding period. Students should not be encouraged to hold their breath for long durations.



8. Rhythmic Breathing

Demonstrate and then have pupils perform the skill while bending at the waist to place the face in the water. Exhale through the mouth slowly under water. Then rotate the head and shoulder to one side just enough for the mouth to clear the water. Then inhale through the mouth, rotate the face back into the water, and repeat. Practice this key skill until the student can comfortably perform rhythmic breathing 10 to 15 times without hesitation and without lifting the head.

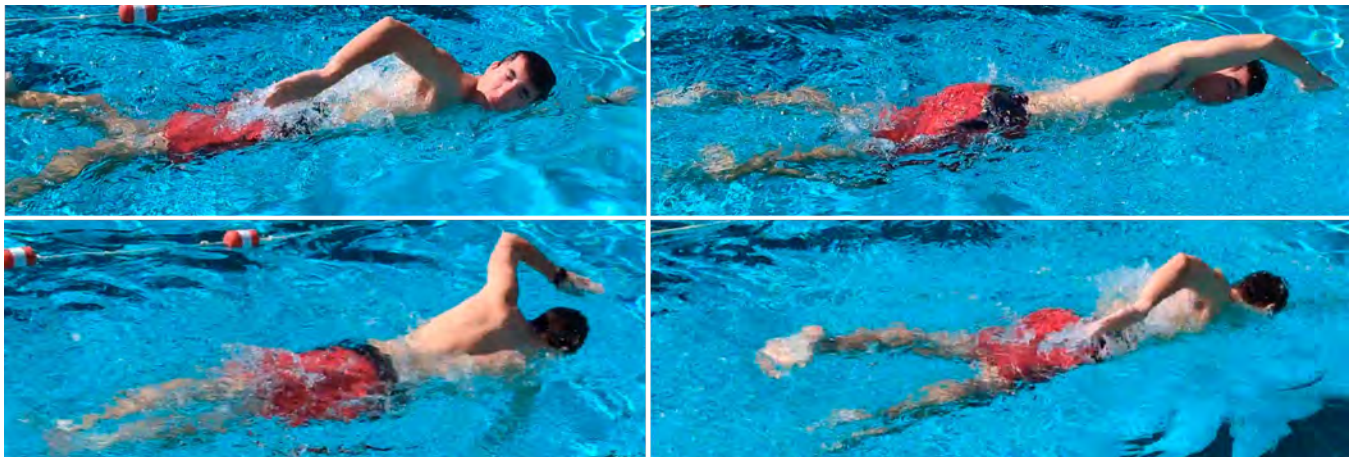


Lifting the shoulders and head vertically to bring the mouth above the water is a common error. Point out that exercise begins looking down into the water with the nose submerged. When the head and shoulder are rotated, the nose and mouth clear the water to look to the side. At the same time, the lower ear enters the water. Students may wish to think to themselves: nose-ear ... nose-ear ... nose-ear.

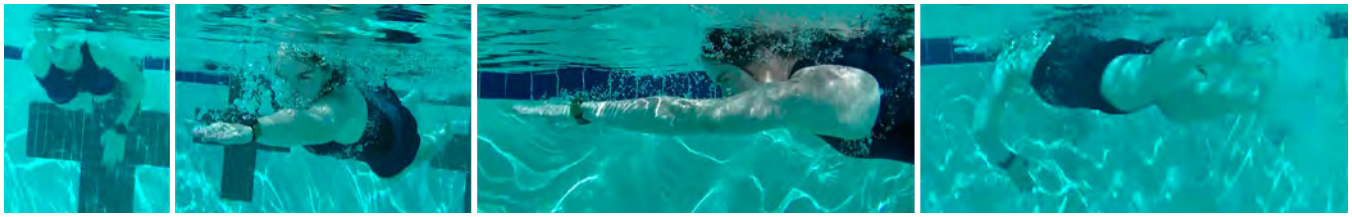
Learners should pick whichever side feels more comfortable and stick with it. Inhaling should be done quickly with only the mouth. To be ready for the air intake, the air from the previous breath should be released prior to turning the head, either continuously as the head turns down, or just before the rotation up, but not so late that is has to be released explosively. The exhale may be done with the mouth, nose, or both - whichever comes naturally and feels most comfortable.

Next, add the arm motion while standing or walking with waist bent. Those just learning should breathe ever time the arm on the breathing side pulls past the head.

8. Coordination



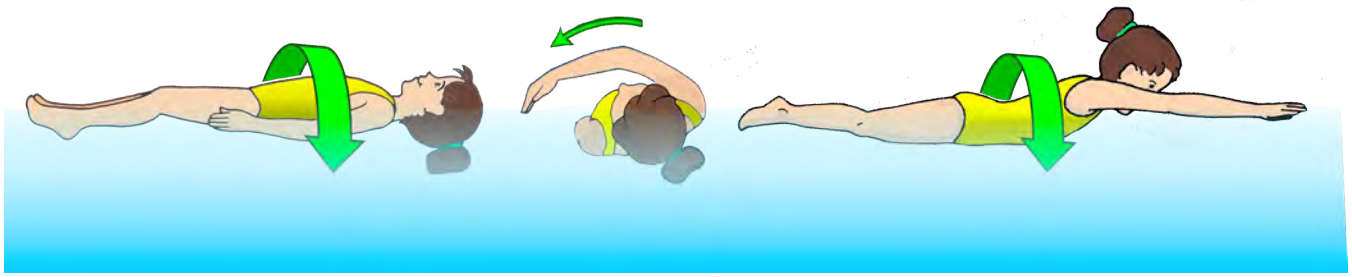
Demonstrate the complete stroke, and then let the buddies work on coordination, which is best gained with practice. Start with a prone glide with a kick and then add the arm motion. It may be necessary to back up to refine individual elements until the components work well together.



Don't rush this step but provide enthusiastic encouragement tempered by patience. The instructor should stress the ease of the stroke, not speed. The combined motion should be easy, relaxed, and streamlined. Concentrate first on form, and then practice for longer distances. The next two steps can be introduced at this stage, but continue to work on coordination and distance in shallow water until the buddies can easily swim at least 25 feet, or across the pool in shallow water, without stopping.

9. Turning Over

Once participants have learned the crawl stroke and are able to do a back float and back glide, they should learn how to turn over from front to back, and from back to front. This is a useful safety skill, enabling a swimmer to rest on their back when they begin to tire, and then to resume the crawl stroke when rested.



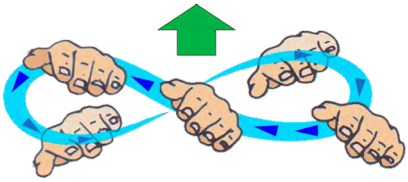
To turn over while swimming on the back, the swimmer lowers one shoulder and turns the head in the same direction. To turn from the prone position onto the back, the swimmer lowers one shoulder and turns the head in the opposite direction. Although explanation and demonstration of these turnover maneuvers will be helpful, participants will learn well by practicing and experimenting with the concepts of "roll over and float" and "roll over and swim." Despite the apparent simplicity of this skill, the instructor should not omit it, and participants should practice these maneuvers in shallow water before attempting to swim in water over the head in depth.

10. Stops, Treading Water, Reverses, Deep Water Starts

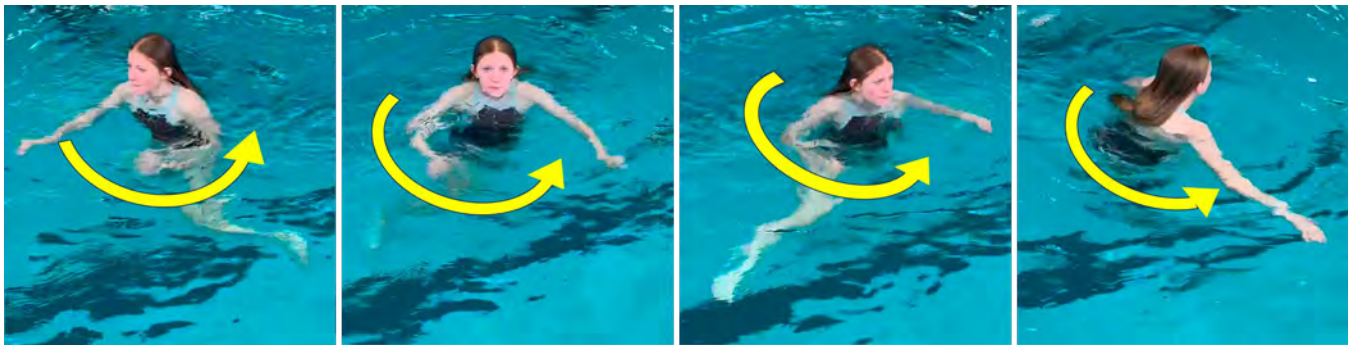
Some skills are not particularly significant when swimming in shallow water where footing is always available. But the ability to stop and restart swimming, and to change direction, is of critical importance when swimming in deep water. (Recall that the beginner classification test requires a stop and sharp turn.) To stop while swimming the crawl stroke, the swimmer simply stops kicking and raises their head while pushing down and slightly forward with the arms.

Treading is used to remain upright in deep water with the head above the surface. It typically uses a sculling motion with the hands and a kick. The kick may be a slow, wide flutter. Beginners may also experiment with other leg motions that resemble the scissors or whip kicks learned later in a stroke development course.

Learners should first practice and refine the skill in shoulder depth water where they can stand simply by straightening the legs. They should then practice in deep water under close supervision until confident with all the skills.



The rotary, or eggbeater, kick is also a good option for threading water. The knees are bent and lifted so that the thighs and lower legs are somewhat parallel to the bottom. Each leg is rotated so that the feet make a large circular motion. One leg turns clockwise, the other counter clockwise.



Turning while treading in a vertical position can be used to change or reverse direction. Learners should experiment with modifications to arm and leg motions until they are able to rotate a full 360 degrees in both directions. Sweeping one arm opposite to the desired turning direction is an easy motion to use for the skill.

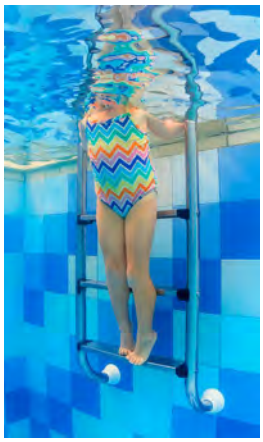
Starting a stroke in deep water is accomplished by pressing the arms down from the surface of the water and back alongside the body while leaning forward, putting the face in the water, and beginning the flutter kick. This planes the body into the prone glide position for the crawl stroke to begin.

To turn while swimming the crawl, the swimmer sweeps wide with the arm stroke on the side opposite the turn and reaches out in the direction of the turn with the other arm.

Practice skills in steps 8 and 10 in shallow water until the pupils are proficient. They may then be gradually introduced to water over the head. For example, in a small uncrowded pool, they can enter the water from a ladder in the deep end and swim along the side to the shallow end where they can stand.

They can then start in the shallow end, swim along the edge to the deep end, stop by holding the side, and then return to standing depth. Later, they can turn rather than stop. (A reach pole is a good safety device to have on hand once the buddies are ready to venture into deep water. It should be positioned where easily accessible, but unobtrusive.)

11. Jump Entry Into Deep Water




An important part of learning to swim is mastering the skills involved in deepwater entries. First, the instructor should establish that pupils have gained sufficient confidence from previous exercises. Have them use a ladder to enter deep water, push away, tread water, and then grasp the ladder again. Next, have them hold on the ladder, climb down as deep as they can, and then back up. They should then push down to see if they can reach the bottom without holding on. If they are not comfortable doing these exercises, they may not yet be ready for a jump from the side. Additional practice swimming, stopping, reversing direction, and treading in shoulder depth water may be needed.

If a ladder is not available, the instructor or an assistant may hold a reach pole vertically along the side of the pool. Learners may use the pole for physical support and mental reassurance as they become accustomed to going up and down in deep water.

To teach a simple stride entry, the instructor should first demonstrate the skill. Then have the participant stand at the pool edge where the water is shoulder deep. Arms should be extended to the side over the water with the body leaning slightly forward from the waist. The pupil should then step out over and into the water. Participants should step away from the side, rather than try to land close enough to grab hold.

After the learner gains confidence in shoulder deep water, the exercise should be repeated in deep water. Although it is possible to keep the head out of the water when performing a stride entry well, that is not the goal at this stage. Rather, the stride entry is used to keep the learner near the surface rather than plunging to the bottom. On the other hand, the entry into the water should be more or less vertical. A flat flop into the water to land in a prone position is not appropriate.

Deep water entries under close supervision should be repeated until the learner can jump in, turn, and return to the side, as well as jump in, level off and swim across the pool.

To help reassure learners during the first few jumps into deep water, an instructor or assistant may be in the water with a flotation aid at the ready. However, they should not try to catch the pupil, or be close enough for the pupil to jump and grab them.

Next Steps: Stroke Refinement and Additions

While an excellent milestone, the ability to complete the Scouting America Beginner classification test is just the first step to becoming safe, comfortable, and proficient in the water. Anyone working toward or beyond the beginner level will benefit from frequent opportunities to practice their skills. For all ages, learning though recreation is more enjoyable than mechanical repetition. Nonswimmers and beginners will progress somewhat by simply by being allowed to play in the water (under safe supervision, of course). However, advancement to the Swimmer level and beyond is most easily accomplished through additional instruction by an experienced instructor. Cub Scout parents and leaders should pursue lessons offered by the American Red Cross, the YMCA, and various parks and recreation departments. A Scouting America local council aquatics committee may be able to assist unit leaders

with contacting providers in those organizations. Scouts BSA can increase their skills by working on First Class rank and Swimming merit badge requirements at summer camp, during special district winter aquatics programs, or by contacting a counselor through their Scoutmaster.

Scouting America swimming programs emphasize early mastery of restful strokes. A person with a restful elementary backstroke should be able to swim for long distances in warm water, even in less-than-perfect form. However, a person whose only option is a poorly executed crawl will need to be a well-conditioned athlete to cover anywhere near the same distance. A restful backstroke or breaststroke with a glide doesn't take much energy, and uses the legs for much of the power. A hasty crawl, particularly with the head slung from side to side, takes a lot of energy, and much of the effort comes from the arms. The difference is similar to that between walking and running. Most people can walk for long distances on flat ground without breathing heavily and having to stop to rest. Those same people will not be able to run full-out for long. Running, and swimming the crawl, simply take more energy, and most folks aren't trained marathon runners or competitive swimmers. Instruction should continue until basic strokes such as the elementary backstroke, the breaststroke, and the sidestroke are learned sufficiently that distances are easily measured in hundreds of yards, rather than a few tens of feet.

Chapter 9 provides information for refining the crawl stroke covered in the Nonswimmer to Beginner progression as well as covering the basics of other strokes that are required or allowed for Swimmer classification. Proficiency in those strokes is also needed to successfully execute some of the water rescue skills covered in Chapter 10.

"Water Smart" Components for Nonswimmer Instruction

If a parent or leader undertakes nonswimmer instruction using the skill progression provided in this chapter, they should also include age appropriate knowledge for Scouts to anticipate and avoid common drowning risks. Swimming skills are only one aspect of water competency.

Scouting America swimming programs emphasize the eight layers of protection in Safe Swim Defense. Age appropriate activities to teach Safe Swim Defense elements are contained in the Cub Scout elective swimming adventures.

Requirements for **Lion:** ***Time to Swim***, **Tiger:** ***Tigers in the Water***, and **Wolf:** ***Paws for Water*** all include "Learn about the swimming safety rules that you need to follow." Safe Swim Defense is covered in each lesson plan, but in different activities.

Bear: ***Salmon Run*** requirements focus on the attributes of qualified adult supervision, the buddy system, and ability groups. They also include reaching and throwing rescues.

Webelos: ***Aquanaut***, **Arrow of Light:** ***Swimming*** and **Scouts BSA:** ***Second Class*** requirements also address Safe Swim Defense and simple rescues. Aquanaut also covers hypothermia.

Other safety topics should arise and be covered during skill sessions, such as dehydration, heat conditions, and hyperventilation. Use of life jackets is covered in boating program activities.

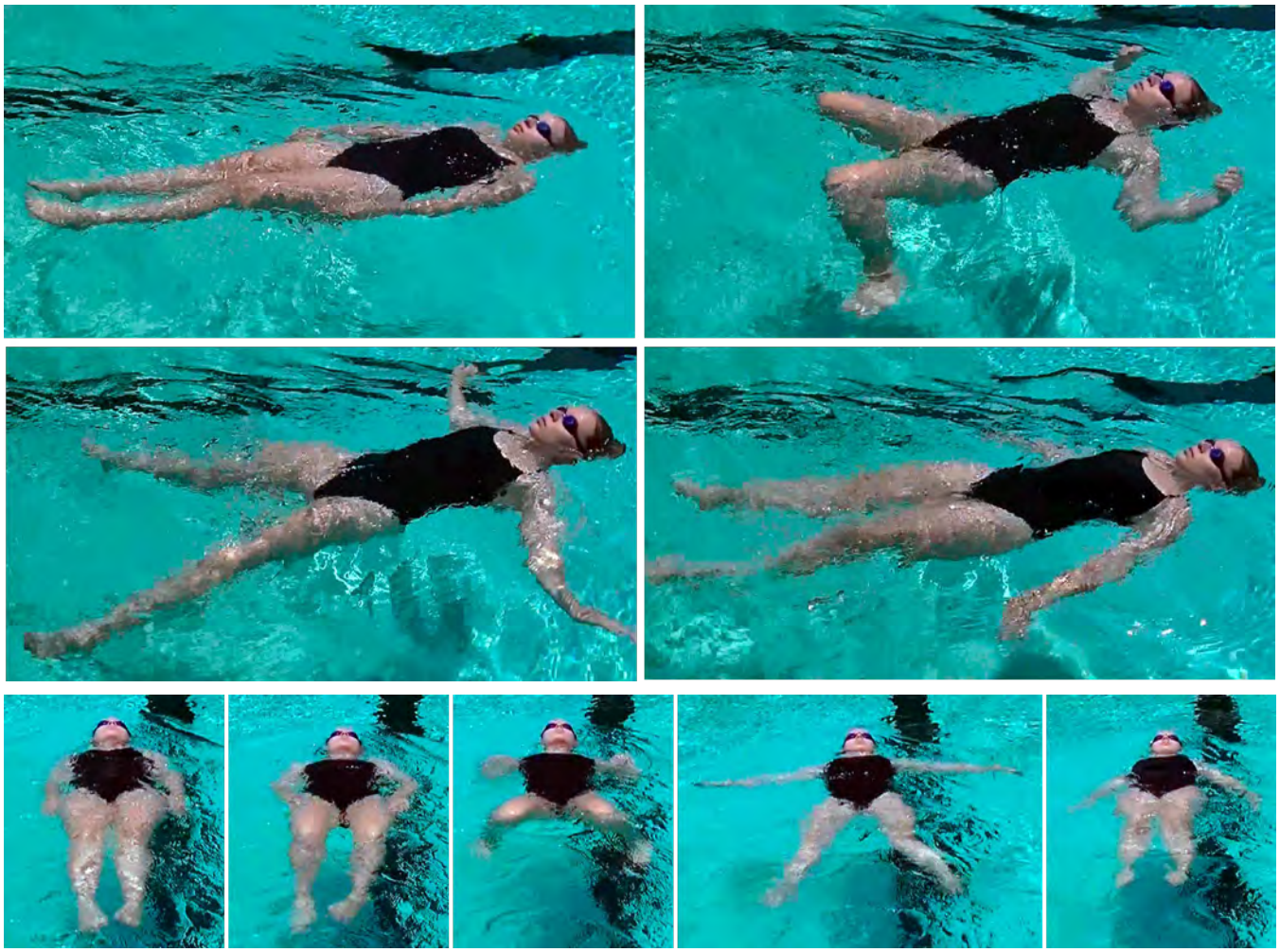
Chapter 9

Swimming Strokes & Water Proficiency

Informed leaders for Scouting America aquatics activities have several reasons to review basic swimming skills, such as administering swim classification tests and helping with advancement. Proficiency in several of the skills is also essential for leaders undertaking Aquatics Supervision: Swimming and Water Rescue Training.

While rescues of distraught swimmers can often be accomplished without entering the water, the ability to respond effectively to some drowning situations requires reasonable proficiency in basic swimming stokes such as the crawl, breaststroke, elementary backstroke, and sidestroke. The first two are used to approach a victim in the water; the second two to pull an unconscious victim to safety. Effective emergency response also requires knowing how to reach the bottom from the surface. The basic components of those skills are reviewed here. Additional information on swimming skills may be found in the *Swimming* merit badge pamphlet.

Elementary Backstroke



The elementary backstroke begins with the arms at the side and the legs together. The whip kick is started by slowly lowering the heels beneath the knees. The ankles are then rotated outward of the knees and returned to the start position in a rapid, continuous circular motion. The knees separate naturally.

At the same time the heels are lowered, the arms are brought slowly along the chest and extended outward at shoulder level. The hands and forearms push water toward the feet at the same time that the legs are making the circular "whipping" action.

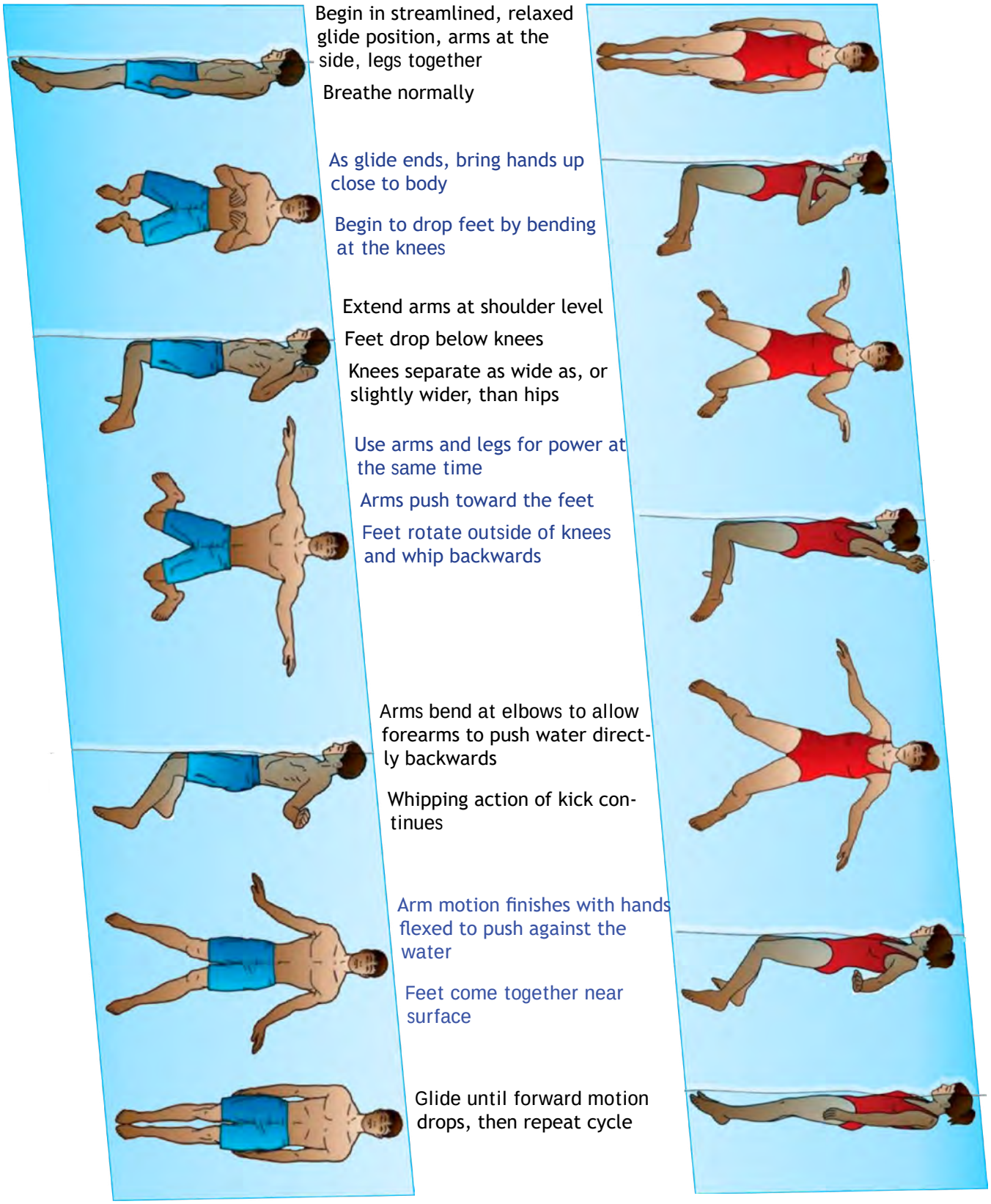
The arms and the legs provide power at the same time and the body glides in the start position. A prolonged glide, held until forward motion slows, is an essential element of the stroke when used to swim long distances. It also minimizes the drag caused by lowering the feet beneath the knees.

The kick by itself is used in various water-rescue situations.

Raising the head and bending at the waist are common mistakes that distort the body position and make the stroke less efficient. Bending at the waist sometimes results from lifting the knees.

The elementary backstroke is the model of a restful backstroke for the Scouting America *Swimmer* classification test.

Elementary Backstroke Sequence



Begin in streamlined, relaxed glide position, arms at the side, legs together

Breathe normally

As glide ends, bring hands up close to body

Begin to drop feet by bending at the knees

Extend arms at shoulder level

Feet drop below knees

Knees separate as wide as, or slightly wider, than hips

Use arms and legs for power at the same time

Arms push toward the feet

Feet rotate outside of knees and whip backwards

Arms bend at elbows to allow forearms to push water directly backwards

Whipping action of kick continues

Arm motion finishes with hands flexed to push against the water

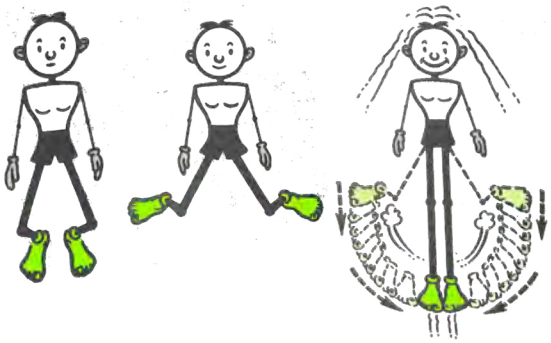
Feet come together near surface

Glide until forward motion drops, then repeat cycle

Elementary Backstroke Tips

Rather than sweeping the arms like oars from the shoulder, the elbows and wrists can be flexed during the pull so that palms and forearms push more effectively against the water. (Variations of a "bent arm press" are useful to generate additional power in several swimming strokes.) A standing dry land drill can be used to demonstrate and get the feel of the motion before trying it in the water. The motion can be described as three continuous phases: up, out, together. The "up" and "out" are slow; the "together" fast and forceful.

A good in-water demonstration allows participants to understand the leg motion. The feet are first dropped slowly beneath the knees, which remain at the surface. The heels are then moved outboard of the knees as the feet are rotated and lifted back to the guide position. The circular motion of the feet and lower legs push against the water to generate power. A drill sitting at the edge of the pool with the feet in the water can be used to prep for trying the kick in the water. The motion can again be described as three continuous phases: down, out, and around. The kick can be practiced in a back glide position without the arms.



Common Elementary Backstroke Flaws

The body should be reasonably flat on the water from the head to the knees throughout the stroke. Lifting either the head or the knees disrupts the body position, causing the waist to bend and a bobbing motion through the water. Here, laying the head back will probably correct multiple problems.

If more than one flaw is present, instructors should concentrate on correcting the most critical first.

Here the arms are extended well above the shoulders. Sweeping the arms down from above the head pushes to the right with one hand and to the left with the other, which wastes energy. Ideally, any pull or push against the water should be opposite the direction of desired motion. For the elementary backstroke, the arms are most effective when they are straight out. However,the bent arm press helps as the arms move toward the sides.

Here, one leg is down while the other is up. The swimmer is using a modified scissor kick rather than the whip kick. That's a fairly common error, particularly for those learning both the elementary backstroke and the sidestroke at the same time.

A scissor kick variation may see fairly effective: this swimmer was moving well through the water. However the scissor introduces a turning moment, so it is more difficult to go straight. Plus one leg is working harder than the other.



The frog kick is also fairly common. Rather than keeping the thighs level, the feet are pulled back near the surface by raising and spreading the knees. The legs are extended out, which if done fast, pushes the swimmer backwards. The legs are then snapped together along the surface. Lifting the legs may cause the body to bob. The frog kick was commonly used, and taught, until the late 1950's. It is also a fairly intuitive motion that swimmers may naturally develop on their own. Swimmers should be able to move more effectively using the whip kick.

To Glide or Not to Glide - a STEM Digression.

Gliding, particularly for the restful strokes, but even for the crawl, allows the body to rest while moving forward from momentum. The slower pace also means less energy is wasted overcoming friction, which increases rapidly with speed. Some swimming manuals claim that the glide should not be held too long since Newton's second law (of inertia) implies it takes more work to start a body moving from a stop than to increase speed while it is already moving. In the absence of friction, that is false. Newton's F=ma equation relates a force, F, to a change in speed over time (the acceleration, a). It does not take more force over a given time to cause a mass, m, to go from 0 to 2 miles an hour (mph), than from 2 to 4 mph, or from 100 to 102 mph.

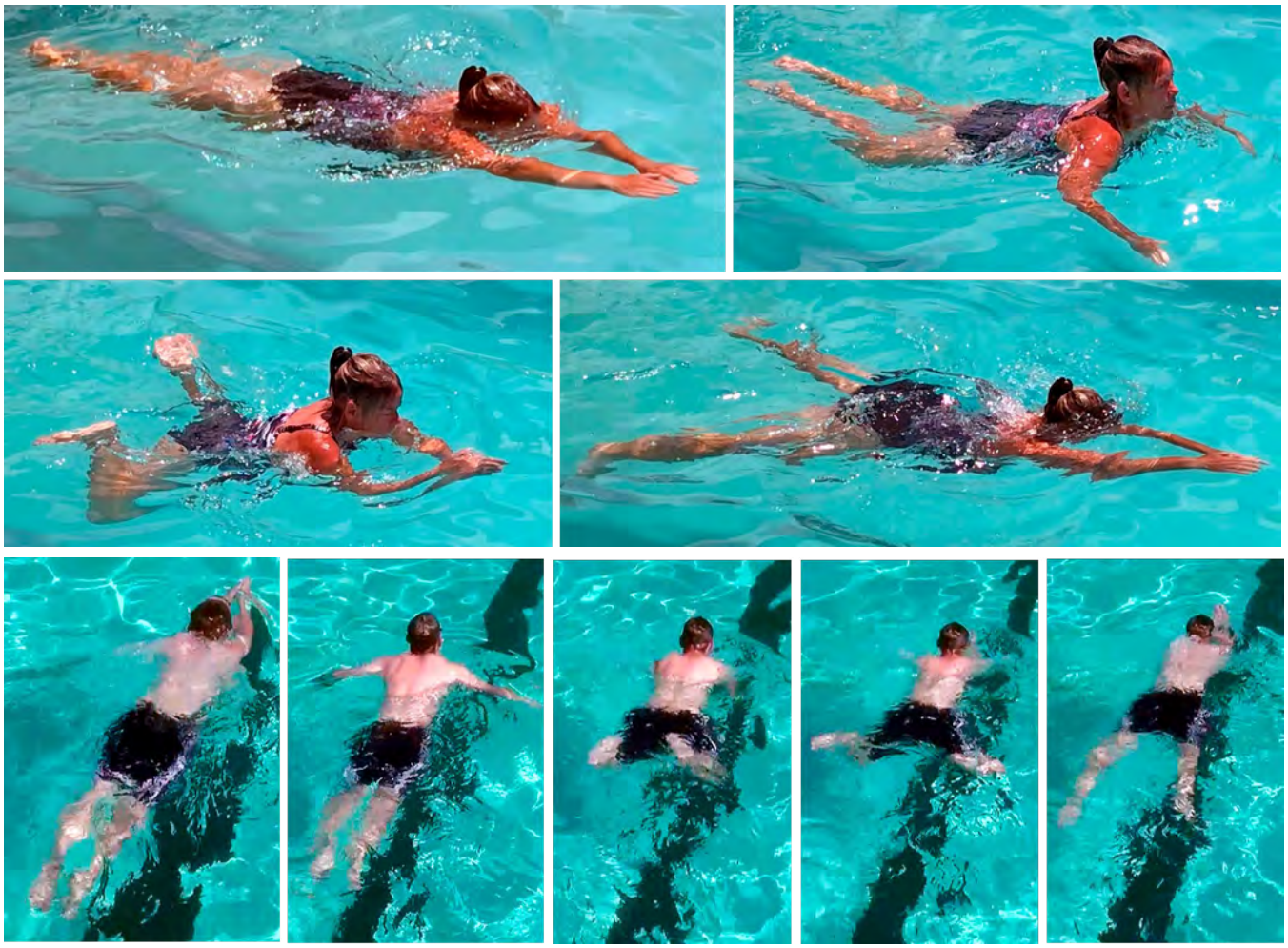
An analogy of pushing a car is often invoked to explain inertia. However, it is harder to start a car rolling than to keep it rolling due to the difference in static friction versus rolling friction of the tires, not inertia. Fluid dynamics, particularly when unsteady motion and drag are included, are extremely complicated. Reasonable sounding statements concerning movement through the water are often too simplistic when examined closely, but sometimes are amenable to simple demonstrations.

Scouts may be asked to cover a given distance using the elementary backstroke. The first time, they should stroke hard, but glide to almost or all the way to a stop, and count their strokes. The goal is to see how few strokes they need. The second time, they should stroke just as hard, but follow one stroke immediately with another. They will cover the distance much faster, but with more strokes. In this case, more strokes means more energy.

So, to cover a distance with the minimum amount of effort, glide for a long time. However, to go faster, stroke more often. Additional analysis including drag shows that the greatest efficiency to maintain a given average speed is achieved when changes in speed are minimized. Ideally a constant force should be applied continuously to just balance the drag. The action of the crawl approximates that, which is one reason the crawl, particularly the arm motion, is said to be more efficient than other strokes. For all strokes, the stroke rate, and the stroke power, should be adjusted to travel at a reasonable speed over a given distance without getting too tired to continue the rest of the way.

The same physics applies to moving a boat through the water with paddles or oars. Also note that the faster a swimmer or boat is travelling through the water, the harder it is to push against the water to further increase speed. A person can't move a paddle fast enough to generate additional force for a motor boat traveling at 30 mph.

Breaststroke

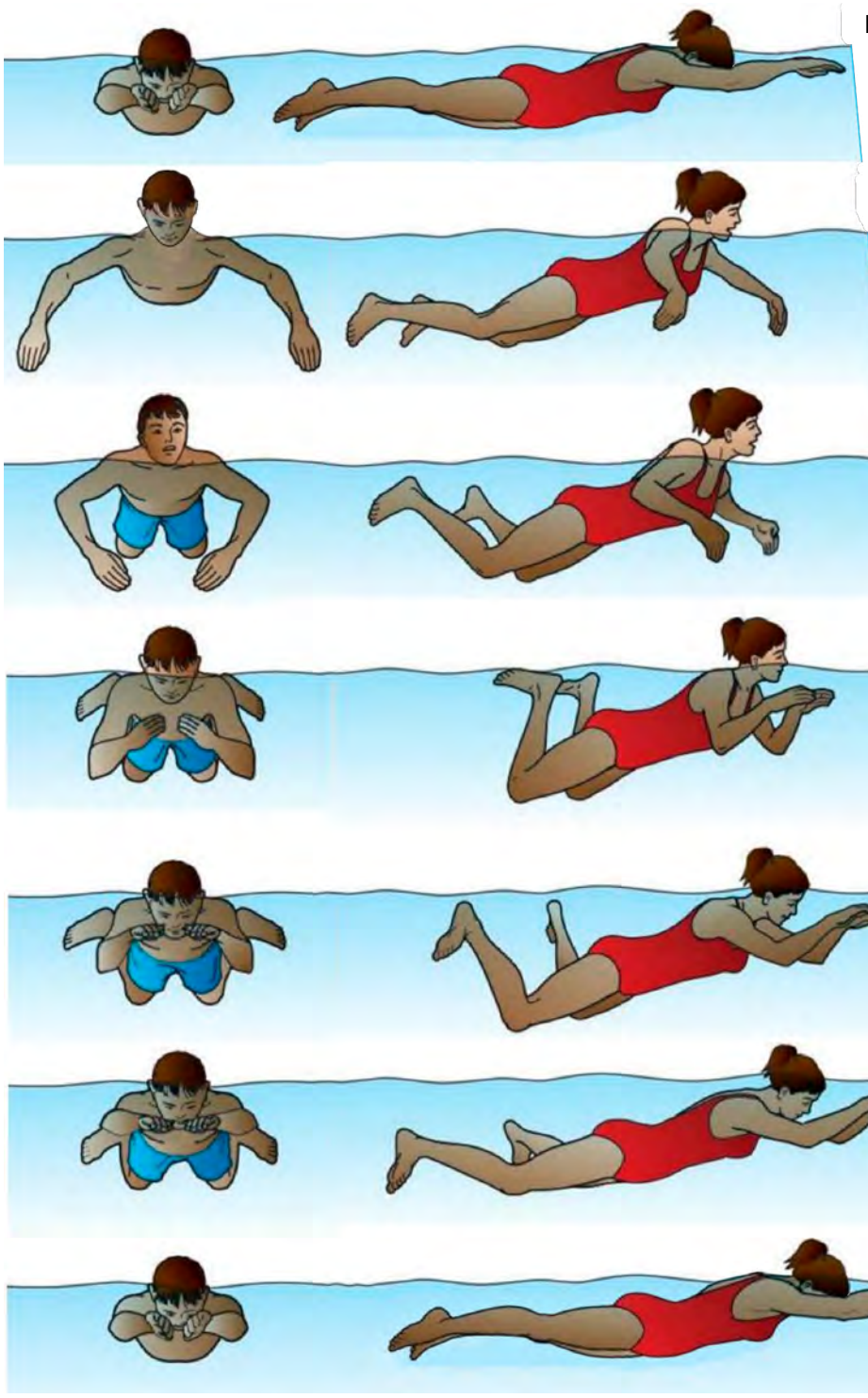


The breaststroke is an easy, energy-conserving way to swim in a prone position and is probably the best all around stroke. Both the arms and legs provide significant power. The speed and power of the stroke can be adapted to the situation: slow and easy to go a long distance without tiring, or fast for a rescue. It is good for swimming in swells. It is easy to track where you are going with rhythmic breathing, but the head may also remain out of the water to provide a better view during recreation or water rescue. Two swimmers can swim along side and speak to one another.

Coordination is a key to learning the stroke since the arms and legs do not provide power at the same time. The stroke begins with the arms and legs extended and the head in the water. The arms bend at the elbows and sweep down and back to shoulder level while pulling the body forward. At the same time, the body is tilted,raising the head for a breath, and the feet are drawn to the hips. The arms are then extended forward as the feet lead the knees in a circular motion that generates power and returns the legs to an extended position. To conserve energy, the body is allowed to glide in the prone position before beginning another stroke.

The breaststroke is a good alternative to the front crawl for the Scouting America *Swimmer* classification test.

Breaststroke Sequence



Begin in a streamlined prone glide position, arms and legs together, face in water

Exhale before and during arm pull

Rotate arms out and back, pushing against the water with hands and forearms

Lift head while continuing to exhale

Inhale after mouth clears water

End power phase of arms when they align with shoulders

Begin dropping knees and pulling ankles toward hips

Lower face into water

Bring hands together

Rotate ankles outside of knees to begin whipping action of kick

Lower face to glide position

Arms extend forward

Whipping action of kick continues

Extend arms into glide position

Complete power phase of kick after arms fully extended

Glide until forward motion drops

Repeat cycle

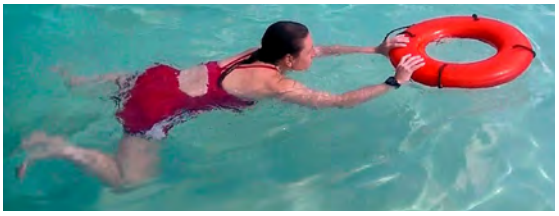
Breaststroke Variations

Competitive Styles

The breaststroke described on the previous pages is a conventional flat style suited to efficiency at low speed. Competitive swimmers seeking to maximize speed typically use wave or undulating styles to reduce drag that increases dramatically at higher speed. The trade off is additional energy expenditure. The extra energy needed to thrust the shoulders high above the water leads to inefficiency at lower speeds as well as affecting streamlining.

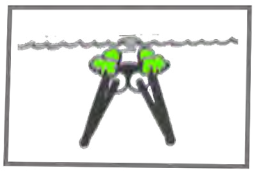
Head Up Versions

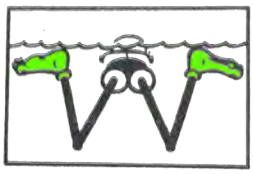
Keeping the head up for extended periods also takes additional energy, but often has advantages that outweigh the extra effort. Having the head up makes it easier to interact with the environment, such as tracking waves and other swimmers. A short glide is still possible.

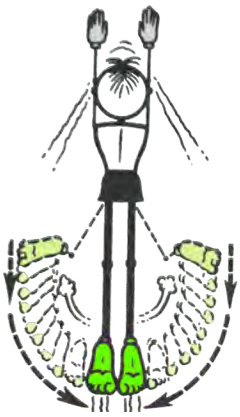


A head up version is also useful to push items through the water.

Breaststroke Tips







The version of the whip kick used for the breaststroke is similar to that of the elementary backstroke, but also different. It should first be practiced without the arms, either holding to the side in a prone position with the head down, or added to a prone glide.

The arm motion may be demonstrated and practiced as a standing dry land drill. The arms begin extended above the head with the hands together or resting one on top of the other. The palms are then rotated out as the forearms push back and slightly down as the elbows bend. Once the elbows are just below shoulder level, the hands and elbows are brought together and the arms extended forward.

Coordination of the arm motion with the kick takes a bit of practice since they do not generate power at the same time. From a prone position with the arms extended forward, the arms pull against the water to move the body forward. At the same time the head and shoulders rotate upwards just enough for the chin to clear the water. The neck may bend slightly backwards but should not be hyperextended. It more are less stays in line with the spine. The face is then lowered into the water as the arms are thrust forward.

A single breath is taken through the mouth as the head lifts. The air is exhaled while the face is in the water. The breathing motions may be added to the dry land drill after the arm pull and recovery is practiced.

Ideally, the kick is timed so that it finishes just after the arms reach the glide position.

Common Breaststroke Flaws

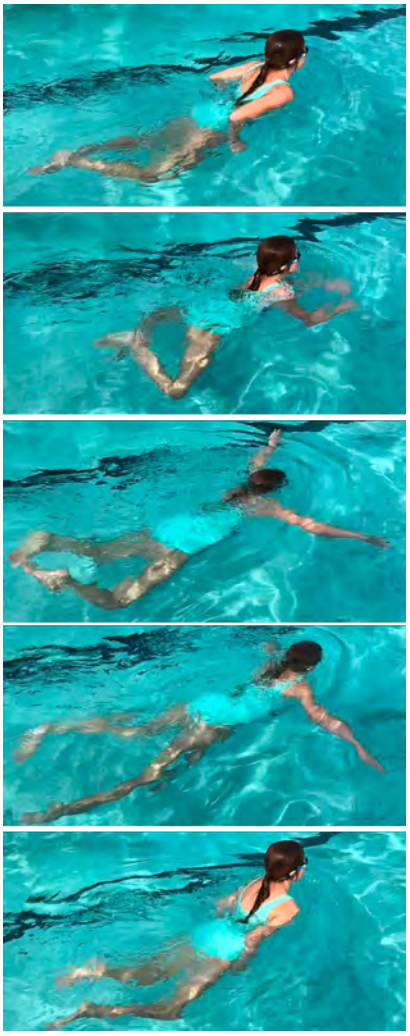
These two photo sequences, arranged top to bottom, show similar problems with breaststroke execution,including problems with timing caused by sweeping the arms all the way back.

The swimmer on the left begins with the head up as the arms finish extending forward. However, the legs are already pulled up. The body is not positioned for a glide.

The legs are whipped somewhat as the arms are swept back all the way to the hips. The cycle begins again as the arms are extended and the legs raised. In the bottom photo, both the head and the feet are above the water.

The swimmer on the right has similar timing issues with power from the kick occurring at the same time as the arms are swept too far back. In this case, there is no whipping action of the legs. Instead, the feet are raised and then lowered somewhat together, somewhat similar to a dolphin kick.

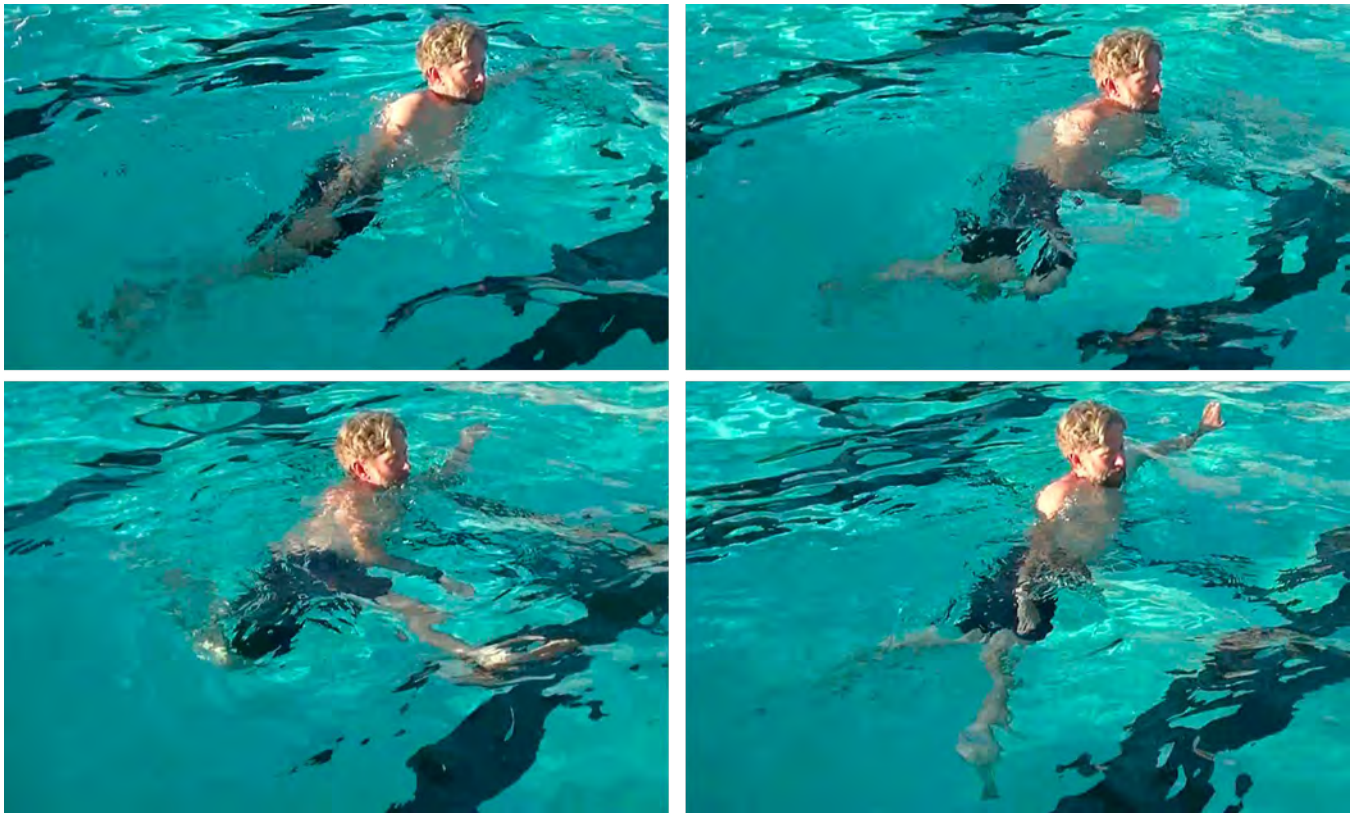
Both swimmers would benefit from perfecting the kick first, along with a glide, in a prone position with the arms extended.



That exercise could then be followed by a dry land drill of the arm motion, which should not be tried again in the water until the arm pull stops at shoulder level.

In the third photo sequence, the swimmer is pushing up with the arms more than pushing back. The kick varies from symmetrical to one leg up with the other down. There is no glide. It would again be appropriate to return to a prone glide to establish a better body position, followed by in water drills for the kick, and then adding the arms.

Sidestroke



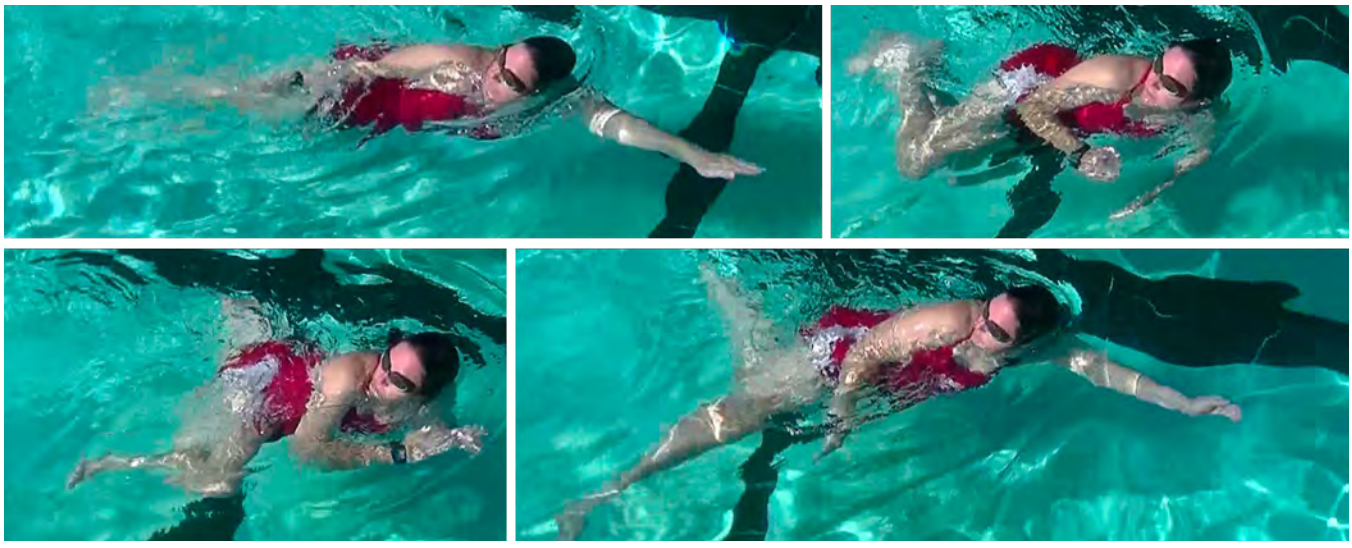
The sidestroke begins with the body on its side, with legs together, the lower arm extended, and the upper arm resting along the chest.

The sidestroke uses a scissors kick in which the heels are first tucked behind the body. The top leg is then extended forward and the bottom leg back. Power is generated when the legs are snapped back to a trailing position.

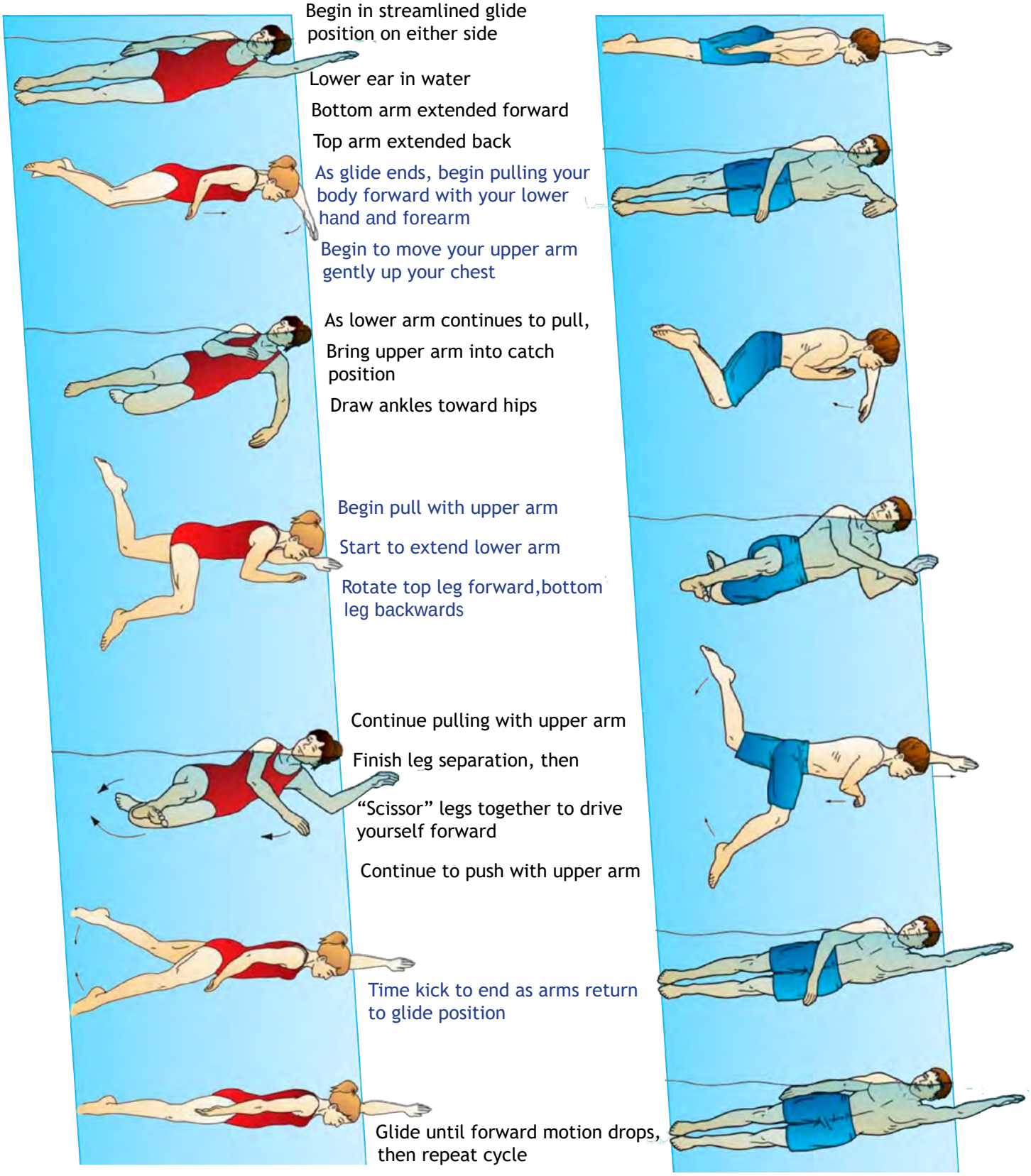
As the legs are tucked, the lower arm bends at the elbow and the hand and forearm pull the body through the water. The lower arm is extended forward as the legs complete the kick. Meanwhile, the upper hand is brought toward the chin and thrusts backward at the same time the legs are brought together.

The stroke uses a glide to conserve energy. Breathing is natural since the head remains out of the water. Progress is easily measured with a view to the side, but the forward view is restricted.

The sidestroke is a good alternative to the front crawl for the Scouting America *Swimmer* classification test.



Sidestroke Sequence



Begin in streamlined glide position on either side

Lower ear in water

Bottom arm extended forward

Top arm extended back

As glide ends, begin pulling your body forward with your lower hand and forearm

Begin to move your upper arm gently up your chest

As lower arm continues to pull,

Bring upper arm into catch position

Draw ankles toward hips

Begin pull with upper arm

Start to extend lower arm

Rotate top leg forward,bottom leg backwards

Continue pulling with upper arm

Finish leg separation, then

"Scissor" legs together to drive yourself forward

Continue to push with upper arm

Time kick to end as arms return to glide position

Glide until forward motion drops, then repeat cycle

If your top leg tends to go backwards, try switching sides. With practice, you should be able to swim on either side.

Sidestroke Variations

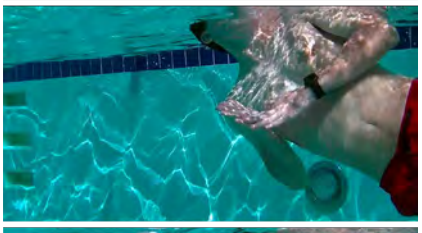
Inverted Scissors Kick

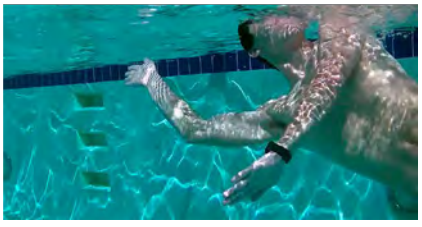
In the traditional scissors kick, the top leg extends forward as the bottom leg goes back. The leg movement is opposite in the inverted scissors kick. The bottom leg goes back while the top leg goes forward. With practice, swimmers can swim on either side using either kick. However, some swimmers will find the inverted scissors is more natural on one side than the other. Both kicks generate power effectively, so it does not really matter which kick is used.

Towing

The sidestroke is useful for pulling items through the water. For that purpose, the lower arm still strokes, but the upper arm does not. The body position for the traditional sidestroke is on the side. Depending on the object being towed, a slight rotation toward the stomach or back may be more natural. If rolled toward the stomach, a regular scissors kick is preferred. If rolled toward the back, an inverted scissors kick is indicated.

Sidestroke Tips





A standing dry land drill is often used to introduce the arm motion. A common description is “reach up to pick an apple, put it in your other hand, then throw it away”. Typically the motion will be easier with one arm lifted rather than the other.

The lower arm leads while the upper arm trails. The first pulls while the second recovers. Then the lower arm pushes while the leading arm reaches forward. The elbows are bent to allow both the palms and the upper arms propel the body forward. Generally, the leading arm provides noticeably more power.

The kick is sometimes introduced lying on one hip with the legs extended over the water. Alternately, the kick may be demonstrated and practiced holding to the side of the pool with one hand above the other. However, both drills may be somewhat awkward.

Ideally, the head is held with the lower ear in the water, with the mouth just high enough to breathe easily. That provides some buoyancy support for the head. The neck should be in a neutral position relative to the spine. The view is across the water. Swimmers may vary the head position to adjust the view. Holding the head more upright tends angle the body away from horizontal. That in turn increases drag.

Common Sidestroke Flaws

Several shortcomings are apparent in this sequence, including:

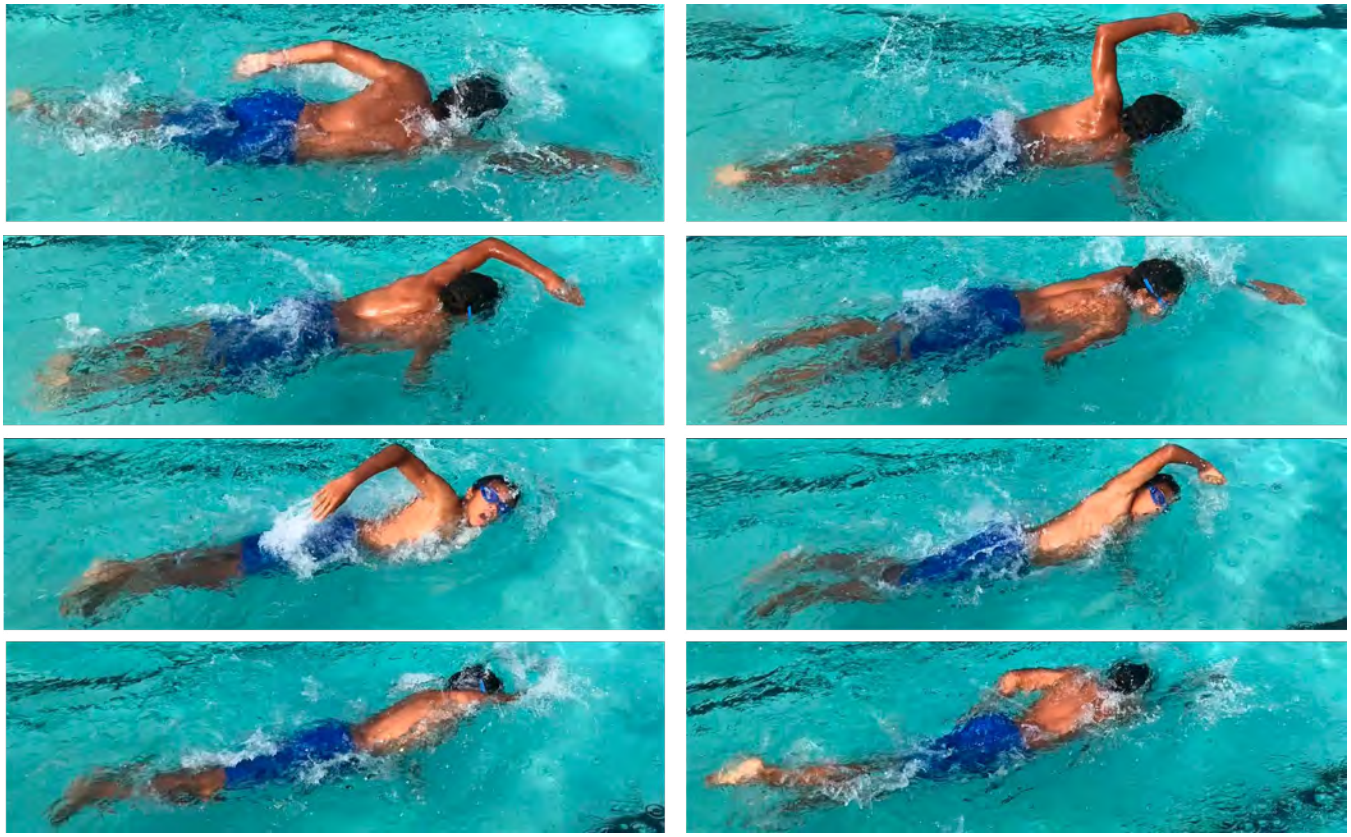
- Body position. Throughout the sidestroke the body should be on its side nearly horizontal, not with the head above the waterline with the hips submerged. The head should have one ear in the water. The "glide" position is not streamlined.
- Arms. The lower, leading arm is properly extended forward and begins to sweep towards the feet with the elbow bent. However, it is recovered well away from the body with the elbow rather than the hand leading. The upper arm correctly moves toward the feet after reaching the level of the shoulders. However, that arm is moved straight out from the chest and swept back like an oar rather than pushing down along the torso with a bent elbow.
- Kick. The upper leg moves back, as in an inverted scissors, but that is more an option than a flaw. However, the legs appear to have significant vertical as well as horizontal separation. The kick combines elements of the scissors, whip, and flutter.
- Coordination. Ideally, the kick should end at the same time both arms reach the glide position. The timing is difficult to make out, but does not appear to be in synch.

Each of the elements should be addressed individually, beginning with body position and ending with coordination. This swimmer appears confident in the water but needs additional coaching and practice to mimic the swimmer shown at the bottom of page 9-11.

The second example again shows vertical separation of the legs. It is fairly common for elements of a scissor kick to appear in the elementary backstroke, and elements of the whip kick to appear in the sidestroke.

Note that the head also submerges.

Crawl Stroke



The front crawl combines a relaxed flutter kick with a rotary arm motion and rhythmic breathing. It is the fastest stroke but can consume considerable energy. A relaxed version is appropriate for recreation, exercise, and the Scouting America swimmer test. The stroke is most efficient if the head remains supported by the water. The body is rotated and the head turned to the side to inhale, and rotated down to exhale. A slight glide is possible if the forward arm action is delayed slightly while the rear arm recovers in the air.

Most of the power comes from the arms. The kick helps stabilize the body but ideally should also generate forward motion.

The crawl provides a fast approach during water rescue, and is often modified with the head up for that application. However, a head-up crawl with the head slung from side to side without rhythmic breathing is a sign of a poor swimmer. Most people swimming in that manner lack the stamina to go far. A head-down version is preferred for the Scouting America *Swimmer* test but is not required.

Additional information on the crawl is provided in the Nonswimmer to Beginner progression in Chapter 8.

Crawl Sequence

Entire body rolls to side

Forward hand extends to catch position

Mouth opens in wave trough for breathing

Hand on upper arm completes push

Upper arm leaves water elbow first

Head rotates down, eyes looking down or slightly forward

Lower arm begins pulling body forward (opposition timing) or is delayed while upper arm catches up

Lower arm bends at elbow to include forearm in pull

Upper arm recovers with elbow high, arm relaxed

Body rotates to other side as top hand slides into water and extends forward

Holding the new bottom arm forward while the other arm recovers (catch up timing) allows a slight, energy saving glide

An up-down flutter kick provides balance and some power

Flex knees and ankles to improve power

Use two to six beats per arm cycle

Keep heels below surface

Body rolls again to breathing side

Exhale underwater prior to next breath

Breathe every arm cycle until you perfect a rhythm, later you may wish to breathe every 1.5 cycles, first to right, then to left

Crawl Stroke Variations

Alternate Breathing

Breathing every arm cycle is recommended until the rhythm becomes automatic. After that, it is matter of preference. Competitive sprinters may go a pool length between breaths. Long distance swimmers often breathe every one and a half cycles. That is, they alternate breathing to the right and to the left. Normally one side is easier than the other so practice is needed to perfect alternate breathing.

Arm Movement: Catch Up versus Opposition

The timing of the stroke varies by swimmer and activity. Beginners often keep the arms in opposition, that is, one is pulling while the other recovers. That allows power to be applied almost continuously. When swimming fast, both arms may be in front of the head for a short time. Alternatively, some swimmers leave the leading arm extended until the other arm is ready to enter the water. That provides a short glide in an extended, streamline position, which reduces drag as the body continues to move forward from momentum. It is possible for recreational swimmers to employ such a glide for a relaxed, energy efficient version of the crawl.

Crawl Stroke Tips

Fins

Swimmers with large feet and flexible ankles have advantages with generating power from the flutter kick, but technique is also important. If practicing without the arms, either face down or on the back, does not lead to improvement, using fins may help. However, try short training fins rather than larger fins used for snorkeling. Large, flexible fins generate significant power but also promote wide, slow kicks. Regardless, many crawl swimmers use the legs primarily for balance rather than power.

Goggles

Some swimmers have difficulty applying power symmetrically with the arms and legs. That makes it hard to swim in a straight line particularly since forward vision above the water is limited. Lane lines and bottom markers in pools make going straight much easier. Goggles in turn make it easier to see bottom lines. Tinted lenses with UV protection are good for outdoor use.

Learn to Swim Progression

Other tips for swimming the crawl effectively are provided in the learn to swim portion of Chapter 8.

Common Flaws for Crawl

Perhaps the most serious and pervasive problem with the crawl is that many swimmers never learn proper breathing technique. It is common to see swimmers thrashing through the water slinging their heads from side to side. That takes significant energy. Such swimmers often have difficulty moving the length of a pool without becoming exhausted. While a head-up version of the crawl is useful in some circumstances, it should be a deliberate choice rather than the only option.

Other swimmers do put their faces into the water every arm stroke, but they bend their necks to lift the head to breathe rather than rotating to the side.

Still other swimmers have problems with proper timing of the arms and breathing. Here the breathing is late. The face should be rotated into the water before the arm on the breathing side recovers.

Excessive bending of the knees while kicking can raise the feet out the water. Slapping the water with feet flat to the surface wastes energy. Slapping the water with the feet angled down can actually move the swimmer backwards.

Ideally, arms leave the water elbow first during recovery. In this and the next photo, the arms are recovered straight. In both cases there are also problems with body position. In the first, the head and shoulder are rotated more than the hips.

In this and the bottom photo, the bodies are not straight. Snaking the body through the water means the propulsion is not all in the right direction and also results in more drag.

Whole body roll is an important component of the crawl. Here the shoulders are tilted in one direction with the hips flat or rolled in the other direction. That may contribute to the body undulation with the head and legs in one direction and the hips in the other.

Trudgen

The trudgen stroke is a variation combining the overarm motion of the crawl with the scissors kick of the side stroke. Symmetric use of the arms provides more power than the unbalanced arm motion of the sidestroke. The out-of-water arm recovery cuts drag. The scissors kick is often more powerful than the flutter.

As the body rolls to one side for a breath, the knees are bent and brought forward to set up the scissors kick. Depending on the stroke rate, the legs may not separate as much as they do in a slow sidestroke. The legs snap together as the head turns back down. That means the legs provide a surge of power just as the arm is fully extended. That in turn sets up a short glide. The other arm strokes and the sequence repeats. Since the legs are trailing while the second arm pulls, a few flutter kicks may be added. That variation is a trudgen crawl.

The stroke is efficient if done at a relaxed pace and is a good option for long distance swimming for recreation and exercise. Those who lack a strong flutter kick may prefer it to the crawl. However, it is not as fast as a crawl and is not a recognized competitive stroke. Therefore it has declined in popularity similarly to the elementary backstroke and sidestroke. It was a popular stroke over fifty years ago but is seldom taught today. However, over the last twenty five years, the U.S. Navy SEALs have developed their own version of a sidestroke that combines elements of the sidestroke, the crawl, and the breaststroke.

The trudgen is an alternative for the crawl in Swimming merit badge requirements. Additional information is provided in that pamphlet.

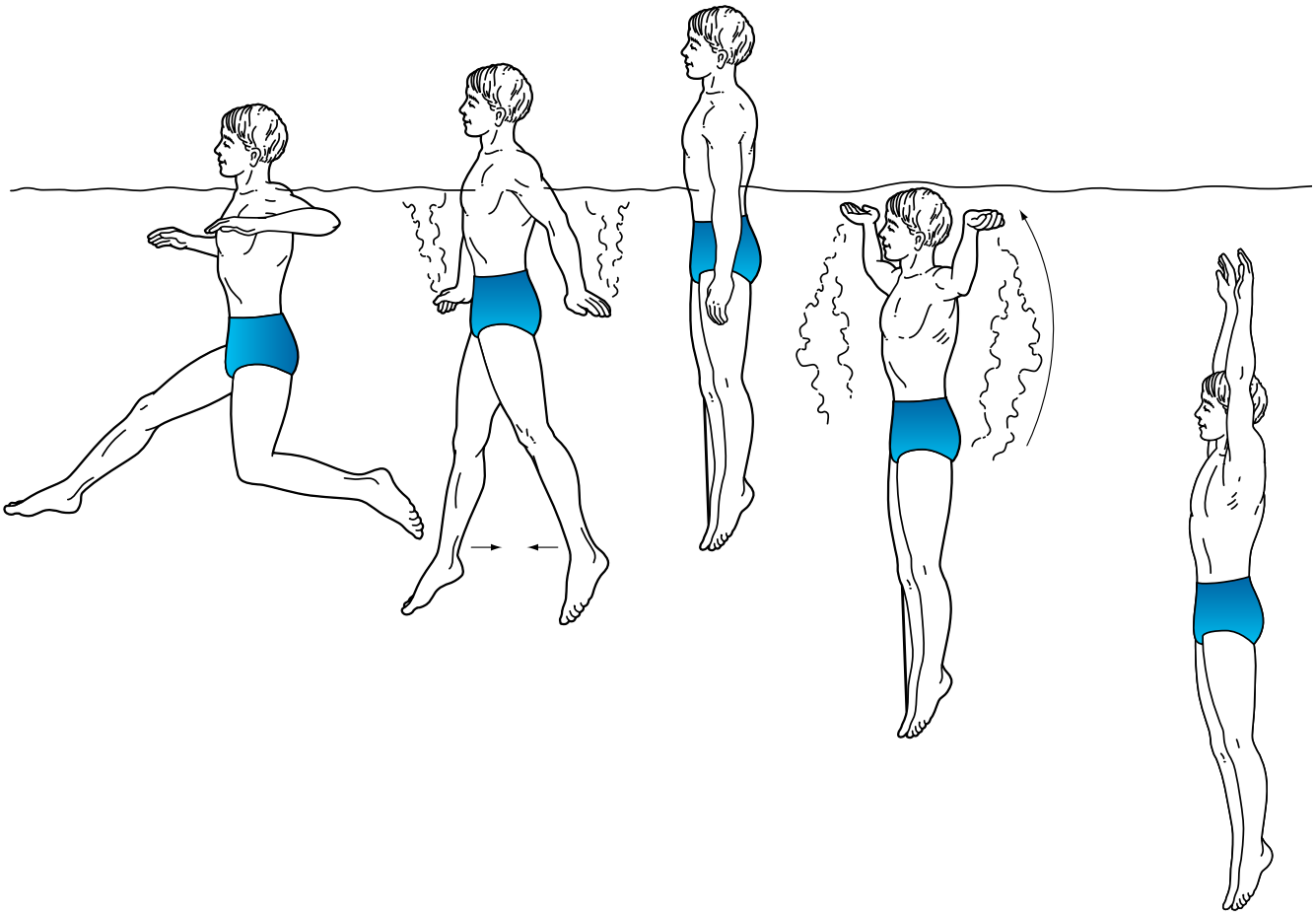
Other Strokes

Some readers may notice the absence of two popular competitive strokes: the back crawl and the butterfly. Those are excellent choices for exercise but otherwise are seldom used for recreation, self rescue, or water rescue of others. Therefore they are not included here. The back crawl is covered in the Swimming merit badge pamphlet. A brief mention of the dolphin kick is made in the next chapter that includes snorkeling skills.

Feetfirst Surface Dive

The feetfirst surface dive allows a person treading water to descend vertically. A scissors kick is used to lift the chest clear of the water, at the same time the arms are pushed downward from an extended position. The legs are straightened below the water as the weight of the torso out of the water drives the body down. During the descent, the arms are lifted from the sides to provide additional downward force. The arms should not be lifted too quickly; they should push against the water rather than break the surface.

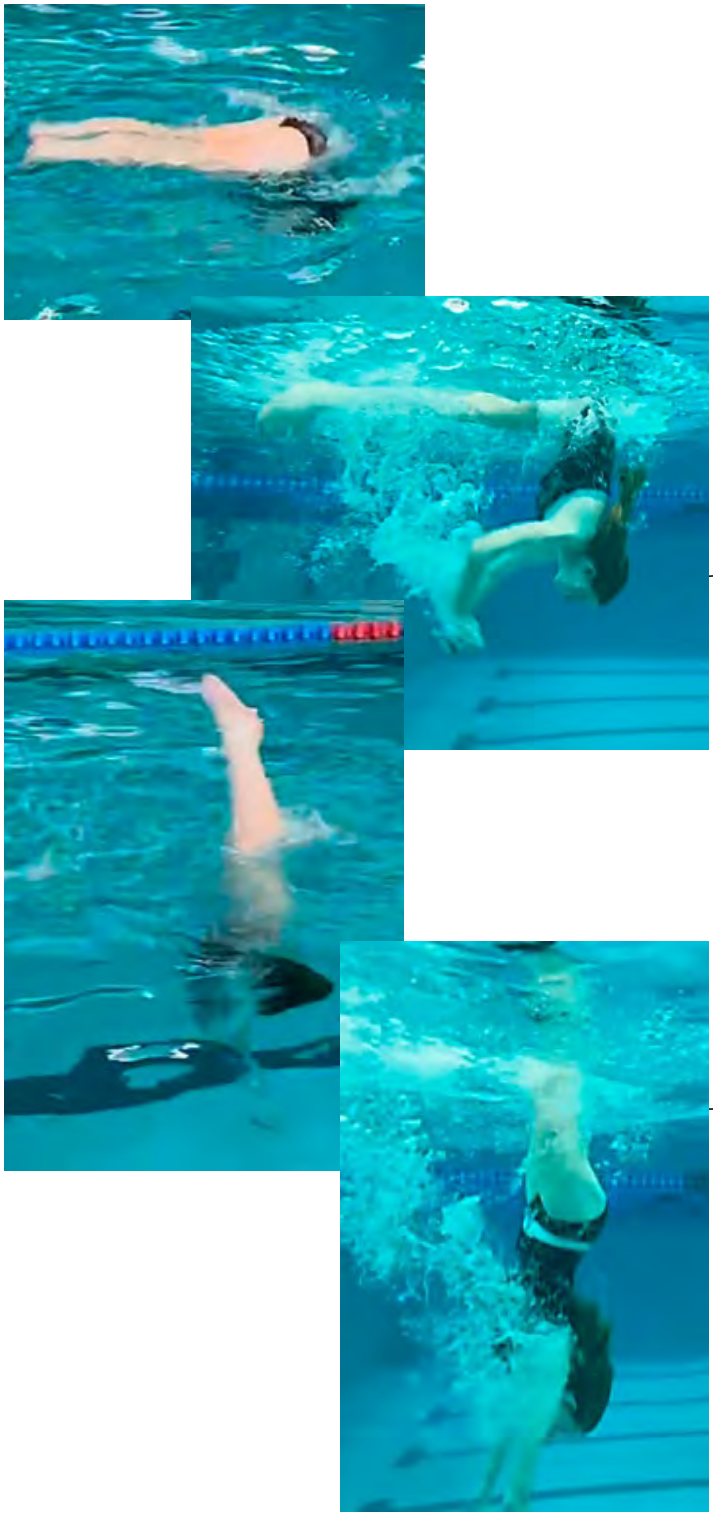
The feetfirst surface dive is used to check the depth when setting up a swimmers area and is the preferred method for retrieving a submerged victim in poor visibility.

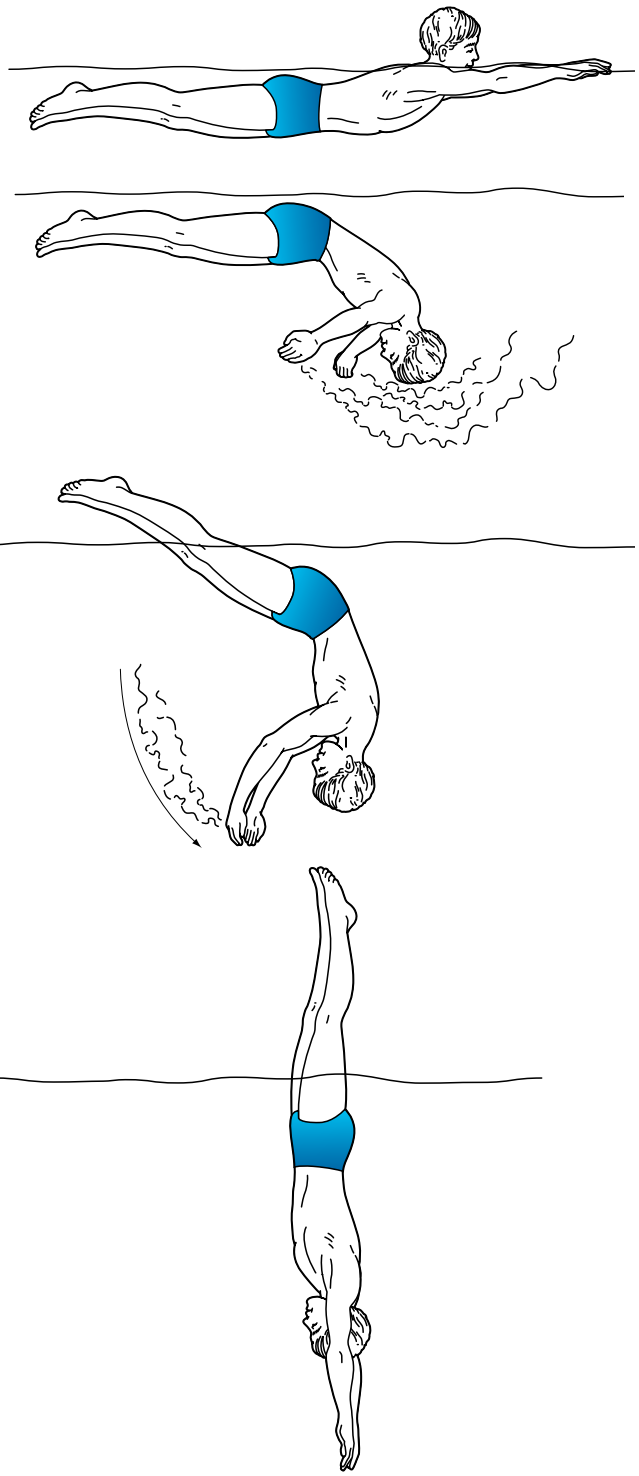


Headfirst Surface Dive

From a prone position, move forward with the arm pull of a breaststroke, and then scoop downward with the arms while bending at the waist and lifting the legs in the air. The weight of the legs above the water provides the force to descend. The headfirst surface dive is known as a **pike** if the legs are kept straight the entire time and as a **tuck** if the legs are first bent and then extended vertically. During the descent, the body should be in a streamlined position with the legs together and the arms extended in front of the head. An arm pull can be used to reach greater depths.

The headfirst surface dive is used for snorkeling and to retrieve a submerged victim in clear water.





Towards Water Proficiency

Scouting America swimming programs emphasize early mastery of restful strokes. A person with a restful elementary backstroke should be able to swim for long distances in warm water, even in less than perfect form. However, a person whose only option is a poorly executed crawl will need to be a well-conditioned athlete to cover anywhere near the same distance. A restful backstroke or breaststroke with a glide doesn't take much energy, and uses the legs for much of the power. A hasty crawl, particularly with the head slung from side to side, takes a lot of energy, and much of the effort comes from the arms. The difference is similar to that between walking and running. Most people can walk for long distances on flat ground without breathing heavily and having to stop to rest. Those same people will not be able to run full out for long. Running, and swimming the crawl poorly, simply take more energy, and most people aren't trained marathon runners or competitive swimmers.

The stroke development programs of some learn to swim providers place an early emphasis on competitive strokes and teach those before restful strokes. Anyone completing their full course progressions will emerge an excellent swimmer proficient in multiple skills. Unfortunately, while many parents enroll their children yearly in the first few levels, fewer and fewer continue to the higher levels where the restful strokes are mastered. Instruction should continue until basic strokes such as the elementary backstroke, the breaststroke, and the sidestroke are learned sufficiently that distances are easily measured in hundreds of yards, rather than a few tens of feet. Surveys reported by the U.S. Centers for Disease Control suggest that a large percentage of Americans fall far short of that goal.

Scouting America programs are aimed at first achieving water competency, that is reasonable skills to self rescue in calm water close to safety, e.g. the *Beginner* swim classification. The *Swimmer* classification adds a resting backstroke and back float and is the entry level for many aquatic activities. Both are targeted in the elective aquatic adventures for Cub Scouts which also promote swim lessons. Both are required to advance in rank in Scouts BSA.

Swimming merit badge furthers the progression to water proficiency, with Lifesaving merit badge covering water rescue skills for lay persons. Swimming merit badge is age appropriate for those in the sixth grade or older. It is also one of the most popular of all merit badges, consistency ranking within the top three. Requirements include executing the crawl or trudgen, the back crawl, the sidestroke, the breaststroke, and the elementary backstroke. Other skills include surface dives, basic rescues, survival floating, and HELP and huddle positions while wearing a life jacket.

Evaluating Swimming Merit Badge Instruction at Scouts BSA Camps

Many Scouts earn Swimming merit badge at council camps. There is no set time mandated to train for the requirements. Scouts who are competitive swimmers will likely progress much more quickly than others. Group instruction of eight Scouts with two instructors will take less time that a class with twenty Scouts and one instructor. However, experience indicates reasonable times needed for youth to learn the skills. Roughly seven hours serves the Scouts well, for example five 90 minute sessions. A survey of camp schedules revealed that 60% of camps offer instruction for less than five hours. On the other hand, 75 % of those same camps allocated more than five hours for Lifesaving merit badge, with 50% at seven or more hours. The skills for Swimming merit badge are more extensive than those for Lifesaving merit badge. Troop leaders may wish to confirm that Scouts granted the Swimming merit badge at camp can actually perform to requirement standards, and work with camp management if the Scouts are not being served well.

Historical Perspective

Robert Baden-Powell founded the international Scouting movement in Great Britain in 1907. His outlook on the importance of swimming ability follows. Note that Scandinavian countries still provide universal swim instruction through their public school systems.

Baden-Powell's Outlook on Swimming and the First Class Scout

"A boy does not really get the value of the Scout training until he is a First Class Scout. The Second Class rank is only a step to that standing. But it is a lamentable fact that a good many are content to remain as Second Class Scouts once they have gained a few badges of proficiency. It is primarily for that reason mainly, that the All Round Cords are now obtainable only by First Class Scouts. This move has been welcomed by Scoutmasters as giving an incentive to the lads to keep progressing in their training.

"Of course, the main objection to it is that it necessitates the boys learning to swim, and facilities for this do not exist in all centers. It has, therefore, been suggested in one or two cases that this rule should be relaxed. I am afraid that I have been very 'sticky' about it, and although I generally make things as elastic as possible, I may have appeared unnaturally obstinate in this one particular: but I had reasons, and experience has now shown those reasons were right.

"When a boy has become a First Class Scout—but not before then—he has got a founding in the qualities—mental, moral and physical—that go with making a good, useful man. And I look on swimming as a very important step, combining as it does attributes of all three of those classes. Mentally, it gives the boy a new sense of self-confidence and pluck; morally, it gives him the power of helping others in distress and puts a responsibility upon him of actually risking his life at any moment for others; and physically, it is a grand exercise for developing wind and limb.

"Every man ought to be able to swim; and in Norway and Sweden, the home of practical education, every boy and girl is taught swimming at school.

"The fact that swimming has got to be learned by the Boy Scout before he can gain his First Class badge has had the effect of putting the character of the lads in very many cases to a hard and strengthening test.

"At first they complained that there was no place near where they could learn to swim. But when they found this was not accepted as an excuse, they set to work to make places or to get to where such places existed. I have heard of boys riding five miles on their bicycles day after day to swimming baths; streams in many country places have been dammed up, and bathing places made by the Scouts; the summer camp has been established at some seaside or riverside spot for the special purpose of getting everyone trained in swimming.

"It can be done if everybody sets his mind to it. If the boys are put to extra trouble in bringing it about, so much the better for their character training. In any case, I look upon swimming as an essential qualification for First Class Scout, and for every man. Also, I don't consider a boy a real Scout till he has passed his First Class tests."

—Lord Baden-Powell, February 1914

Chapter 10

Water Rescue for Unit Swims

One goal of Safe Swim Defense is to eliminate the need for water rescue. Even so, the adult supervisor must ensure that appropriate emergency response will be implemented should the need arise. Effective and safe water rescue requires properly equipped and trained personnel.

If the adult supervisor lacks a water safety background, one way to achieve protection is to conduct unit swimming only where trained lifeguards are provided by a facility or tour operator. Although that is certainly a reasonable and prudent approach, it limits the opportunities available to the unit. The alternative is for unit leaders to acquire the necessary knowledge for the unit to function safely using its own resources. Required online training in Safe Swim Defense only allows unit leaders to gauge their level of preparation: it does not provide physical training in the necessary skills. Scouting America's Aquatics Supervision: Swimming and Water Rescue covers the skills presented in this section and is recommended for leaders conducting swimming activities where trained lifeguards are not on duty.

Unit members who have completed lifeguard training from organizations such as the American Red Cross, the United States Lifesaving Association, and the YMCA are valuable resources, but they should still receive Safe Swim Defense training. Such organizations assume that the lifeguards they train will be employed at an established facility. They may not include instruction in how to set up a temporary safe swim area, how to perform rescues with a range of equipment, or how to limit risk using swim tests, ability groups and the buddy system. Safe Swim Defense addresses those additional items.

Lifeguard training programs offered by other organizations are designed to meet regulatory demands for paid, professional lifeguards. Scouting America employees who supervise swimming activities at Scout camps are subject to such standards. Although the material in this section is consistent with the training received by professional lifeguards, it is NOT a lifeguard training program. Training for Swimming and Water Rescue is designed to prepare the volunteer unit leader to conduct safe unit swims in situations where all elements of Safe Swim Defense are in place, not to serve as a professional lifeguard. Note that the rescue procedures covered in this chapter may not apply to substantial surf or whitewater. Neither are considered safe areas for unit swims.

The Rescue Process

The Royal Lifesaving Association of Australia uses four **A**s of rescue:

- **AWARENESS** Recognise an emergency and accept responsibility
- **ASSESSMENT** Make an informed judgement and develop a plan of action
- **ACTION** Effect a rescue
- **AFTERCARE** Provide aid as needed

This chapter covers how to recognize that a person in the water needs help, and skills to provide that aid. The next chapter on Safety Team Preparation covers how to predetermine and activate a plan of action for unit swims.

Victim Recognition: Situations & Characteristics

The first step in a rescue is recognizing that someone needs help. The need may be obvious. You may observe someone dive into shallow water and then float facedown motionless at the surface. But not all drowning situations are that dramatic or easy to spot. A child who appears to be playing may actually be in serious trouble.

ENDANGERED

INJURED

ACTIVE

PASSIVE (Submerged)

It is important to note that not everyone in difficulty will call for help or seem to be struggling.

People in danger of drowning can be divided into different classes or categories based on their condition and circumstances. In turn, basic rescue techniques are influenced by those situations. Different classification schemes are possible, including endangered versus injured, tired versus panicked, distressed versus drowning, conscious versus unconscious, active versus passive. The labels are less important than identifying specific behaviors and how they influence rescues. Several such categories are discussed. Note that these are guidelines, not absolutes. An actual victim might not exactly fit the descriptions and may slide from one type into another over the course of a rescue. It may be difficult to tell one type from another. Basically, you need to identify anyone unable to control their movements in the water and decide how to provide support and move them to safety. The time you have to respond will also depend on victim characteristics.

Videos provide a better appreciation of victim characteristics than still photos or written descriptions. Various enactments are provided in *Safe Swim Defense* training. Videos of actual drowning situations can be found online. Among other resources, the *Lifeguards Love YouTube* website has compiled various examples. Those may be accessed at: https://www.lifeguardsloveyoutube.com/

Endangered Swimmer

Anyone needing water rescue is assumed to be in danger of drowning. That risk often arises from the person's lack or loss of swimming ability. However, a separate category is useful to address situations when a competent swimmer faces serious environmental difficulties. Those problems may arise intentionally from someone exceeding their skill limits while undertaking extreme activities, or unintentionally as the result of an accident or emergency. A capsized canoeist caught in a cold, fast current is one such situation. A kayaker pinned against a rock is another. Ocean currents can sweep a swimmer out to sea. Fast-rising tides against a cliff face can catch a hiker off guard. Fishermen can be swept off jetties by abnormally high waves. Flash floods can trap motorists in their cars. The situations can vary greatly and so will rescue responses.

In some cases, the victim can make it to shore without aid and the rescuer's job becomes one of follow-up support, first aid, and transportation. In others, assistance can be provided from shore. In still others, the only safe option is to immediately seek aid from a trained rescue squad with special gear. Such situations should not arise at a planned unit swimming activity. Both Safe Swim Defense and Swimming & Water Rescue training should provide leaders with knowledge to recognize and avoid unsafe conditions. This category is of greater concern for unit float trips on flowing water. Techniques for assisting capsized boaters will be discussed in the chapters for various craft in the next section.

- **Unique situations**
- **Rescuer safety a primary concern**

Injured Victim

A water rescue can become even more complex if the victim is injured. Diving into shallow water or being struck by surfboards can cause head and spinal injuries. Cuts and broken bones can result from boat collisions, waterskiers hitting objects, cars entering the water, boats capsizing in rapids, or a swimmer being cast against pilings by the surf. Burns can occur from gasoline explosions on motorboats. Fishermen might be entangled in hooks. Painful stings may result from encounters with marine life. In all such situations, general first aid rules apply: Treat the most serious condition first, do no further harm, and quickly summon advanced help if needed. In water rescues, the most serious condition is likely to be lack of breathing caused either by drowning or a medical condition.

A safe swimming area, combined with supervision and discipline, should preclude injuries during unit swims. Nevertheless, a head-first dive into shallow water takes only a brief lapse in judgment. The unit leader should be aware of ways to stabilize a victim of neck or spinal injury who is breathing until EMS arrives.

- **Rescues similar to those for active or passive victims**
- **Some situations require special response**

Tired Swimmer

A tired swimmer may ask for help. Such persons might be swimming ineffectually in short bursts, proceeding slowly with a weak stroke, clinging to a boundary line, or trying to float on their back. They lack, or think they lack, the energy to make it to shore and may only need encouragement and a helping hand. Such a situation may arise during a swim classification test when a weak swimmer becomes fatigued. Some drowning situations arise when poor swimmers attempt to swim distances that overreach their skill and stamina. Distances in safe swim areas used for unit swims should not exceed those that match the required swim classifications. Never-theless, some youth may become tired when racing or doing other strenuous activities.

By definition, a tired swimmer is calm, should reply to questions, and should cooperate with the assist. Because the tired swimmer is not at immediate risk of submersion, the rescuer may deliberate momentarily to choose between direct assistance and simple encouragement to level off and continue to safety. The person's buddy, who may be close by in the water, may be directed by response personnel to provide encouragement.

- **Calm**
- **Responsive**
- **Able to aid in assist**

Distressed Swimmer

Swimmers in distress are normally vertical in the water and exhibit various degrees of anxiety or panic. They may be poor swimmers who have exceeded their capabilities. A poor swimmer caught in a rip current may first become exhausted swimming against the current, and then become frightened. Acute medical problems such as a cramp or a stroke may also incapacitate a conscious swimmer and necessitate a rescue.

By definition, the distressed swimmer is no longer making any progress but is still able to struggle enough to keep their head out of the water. The swimmer may call or wave for help. If they were able to level off and apply the same energy to their swimming effort, they might be able to reach safety on their own. The swimmer may act on clear instructions from a rescuer and reach for equipment as it is presented. However, such a victim may not be rational and could grab a rescuer. Contact should be avoided. The longer a distressed swimmer remains in trouble, the more likely it is that they will submerge. Prompt support is needed.

- **May call or wave for help**
- **May reach for aid**
- **May grab rescuer for support**

Active Drowning Victim

An actively drowning person is also distressed or distraught. An intentional attempt to remain at the surface — not mental state — is the distinguishing characteristic between a "distressed swimmer" and an "active drowning victim." The second term is used to indicate a conscious person without deliberate control of motion. Such a victim lacks the ability to remain at the surface and will generally submerge in less than a minute. They are unable to call or wave for help and must be recognized by their facial expression and inadequate movement. The victim usually is vertical in the water and may have their head thrown back with face upward. Arms are extended pressing down, flapping, or rotating in an ineffectual attempt to keep the face above the water to breathe. There is no effective leg movement. The head may repeatedly bob below the surface. This is known as the classic or instinctive drowning response, and may resemble someone playing in the water. Although conscious and very aware of their situation, such victims cannot move just a short distance to safety and cannot respond to commands or reach for nearby equipment. However, such victims will likely grasp an object, such as a flotation aid, or an unwary rescuer, that makes sufficient contact.

- **Cannot call or wave for help**
- **Cannot reach for aid**
- **May grab rescuer for support**

Unaided, a poor swimmer in distress may progress to the actively drowning stage. Other victims may immediately show such behavior. This is particularly true of nonswimmers who have never supported themselves in deep water. A nonswimmer stepping off a submerged ledge will be unable to move a few feet to shallow water. A young nonswimmer knocked off an air mattress will be unable to reach for it and may submerge in only 20 seconds. Speed in rescue is essential. (Such possibilities reinforce the need for identifying nonswimmers, providing close supervision to limit their activities to shallow water, and teaching them swimming skills.)

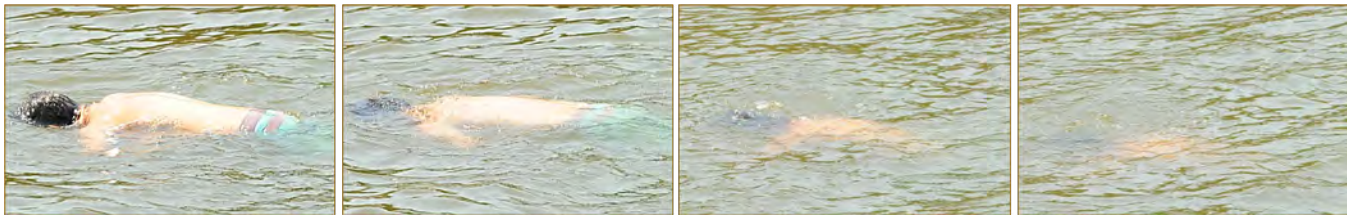
Passive Drowning Victim

Various situations lead to victims who are unable to struggle. Unaided, an active drowning victim will soon suffocate, lose consciousness, and become passive. A person holding their breath too long may suffer hypoxic blackout. Immersion in cold water can result in progressive loss of ability. That will slowly lead to unconsciousness even if the person is wearing a flotation device. Other swimmers may become passive with little or no warning as a result of a diving injury, heart attack, stroke, seizure, drunkenness, or drug reaction.

- **Likely not breathing**
- **Will need medical assistance**
- **Contact needed for rescue**
- **Submersion likely**

A passive victim not wearing a flotation aid may float facedown at the surface momentarily, or, more often, sink part way, or all the way, to the bottom. The person may continue to twitch for awhile underwater but will not be able to surface on their own. Speed in rescue is critical, both in making contact and also while moving the person to safety. Breathing will stop, followed shortly by cardiac arrest. Prompt resuscitation efforts by rescuers will likely be needed for victim survival. EMS should be summoned as soon as possible, ideally as the rescue is underway, since advanced medical care may be needed. Anyone who has lost consciousness in the water should receive medical evaluation.

Because a passive victim cannot grasp a rescue aid, some type of physical contact will be required during a rescue. Ideally, the response will be quick enough to occur at or near the surface. However, since submersion is likely, rescuers must be able to reach the bottom in the deepest part of the swimming area. Rescue efforts may be hampered in murky water by difficulty in finding the person underwater. Safe Swim Defense limits water depths in murky water and advocates life jacket use when prompt rescue of submerged victims becomes problematic.



Active drowning victims may become passive in only 20 to 60 seconds. Passive drowning victims are likely to submerge.

Surveillance Signals and Response

Good Swimmer	Poor Swimmer	Misbehaving Swimmer	Distressed Swimmer	Active Drowning Victim	Passive Drowning Victim
Confident, relaxed motion while swimming or treading water. Decent stroke mechanics.	Weak, erratic strokes over short distances. Lacks rhythmic breathing. Difficulty changing direction or treading water.	Running, shoving, ducking, jumping near or on others, diving into shallow water.	Struggling to stay afloat or make it to the side. Able to breathe, but unable to level off. Hair in face. Anxious. May call for help.	Vertical. Head back, struggling for breath. Ineffective up and down movement of arms. Cannot call for help.	Face down, not breathing, at or below surface of the water. Little or no movement.
Continue to monitor.	Continue to monitor. Return anyone out of their depth to proper area.	Quickly, firmly, and fairly correct all rule infractions.	Provide immediate assistance.	Provide immediate assistance.	Provide immediate assistance and simultaneously summon EMS.

This chart summaries behaviors that response personnel required by Safe Swim Defense should monitor, along with appropriate actions to take. Additional information on surveillance and scanning is provided in the chapter on Safety Team Preparation.

Rescue Techniques: Order of Methods

Safe, effective rescue of a person from the water is easier with prior training and appropriate equipment. At a unit swim, the adult supervisor is responsible for ensuring that suitable rescue equipment is available, and that assigned rescue personnel know how to use it. Preparation needs to include three types of victims: active, conscious victims who will grasp a rescue device; passive, unconscious or nonresponsive victims who cannot; and victims of spinal injury whose movements may need to be minimized.

For active victims, effective rescue response means finding the easiest, quickest way to provide them with support. Victims can be handed a rescue aid from the side, thrown a rescue aid, or have a rescue aid taken to them by boat or swimmer. Reach, throw, row, go is the mnemonic for those options. Reaching assists from pool side, dock, or boat are normally the easiest. Throwing assists extend the range of shore-based assists. If neither of those techniques is viable, then a swimmer can push a float or carry a line to the victim. Contact with a conscious, active victim is seldom necessary. However, those displaying the classic drowning response will not be able to reach for an object that is placed nearby; the equipment aid, but not the rescuer, must be placed in contact with the victim.

An unconscious victim, or someone suffering a seizure or other incapacitating medical condition, will not be able to grasp a rescue device. Contact rescues, which may be nothing more than grasping the victim from the side of a pool, cannot be eliminated. Several techniques, with and without equipment, are available to move a passive victim to safety and will be discussed in the following material. Rescuer-to-victim contact is also necessary to aid someone with a suspected spinal injury.

All rescues end with removing the victim from the water and providing appropriate aftercare. Details again depend on whether the victim is conscious and responsive, nonresponsive or unconscious, or has a suspected spinal injury.

The safety of the rescuer is a major factor in all emergency situations, including a potential drowning. Water rescues in certain "lifesaving" situations are inherently dangerous, such as those encountered by swift-water rescue teams or Coast Guard rescue swimmers. In a lifesaving situation, a rescuer may face an unsafe area with only makeshift equipment and no assistance from others trained in water safety. The appropriate response in such situations may be to go for help. In a "lifeguarding" situation, the area is safe and well-known, appropriate equipment is at hand, and trained backup is available.

Some people do drown in futile attempts to save others in "safe" locations such as pools, but the would-be rescuers are usually frantic friends or relatives with no training whose swimming skills are little better than those of the person in distress. Such double drownings demonstrate that the potential risk of approaching a struggling victim is not to be taken lightly. However, in the controlled environment that should exist at a unit swim, there is little risk to a rescuer who is a good swimmer and follows the procedures described here. Contact with an active victim is avoided by using flotation aids or other devices. Although contact may be needed with a victim who is unable to grasp a rescue device, such a victim is also unlikely to grasp and imperil a rescuer.

Reaching Rescues



Reaching rescues are typically safe, simple, and effective. They can be used for most types of victims. Many drownings occur close to safety. That's because poor swimmers often get into trouble as soon as they enter water deeper than head height. That is likely to be near the edge of a pool or dock. A rescuer at such a location simply needs to recognize the need, lie down, extend a hand to contact the victim, and pull the victim to the side.



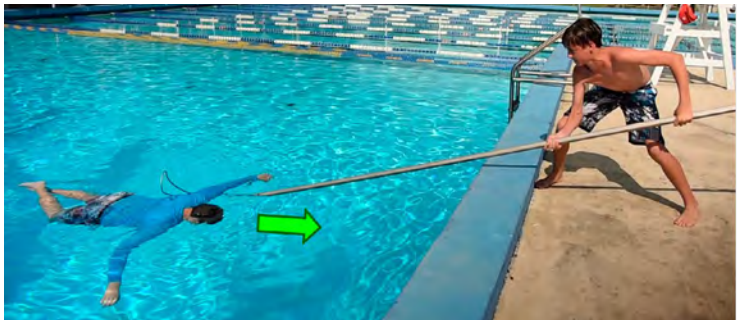
If the victim is farther out, a noodle, paddle, reach pole, or other extension may be used. A tired or distressed swimmer will probably reach for the device, but an active drowning victim will not. For both types of victims, make sure the aid comes into direct contact with their hands and arms.

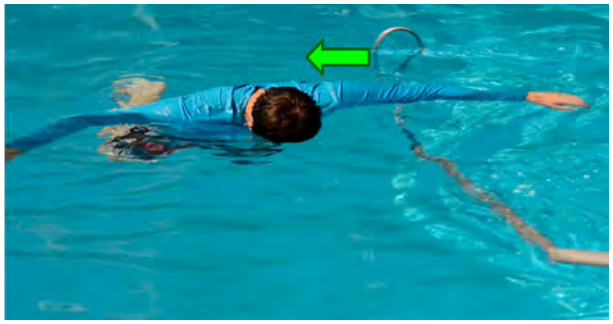



Sweep a pole under the subject's arm from the side rather than poking at them straight on. Keep your weight low with one leg behind the other and brace yourself by putting your weight on the back leg as you pull the person to safety.

When active victims grab an extended hand or pole, they often will stop their own efforts to remain afloat. That sudden extra weight can topple the unprepared rescuer into the water. That is the reason for lying down or otherwise bracing yourself. Don't stand with your feet on the edge and bend over to extend a hand, pole or other aid.

During reaching assists, and ALL rescues for an active victim, tell the victim clearly what you are doing and what you wish them to do. Speak loudly and use simple words and short phrases, such as: *Grab the pole!*, *Hold on!*, *I'll pull you in!*, *You're OK!*.





Passive victims will not be able to grasp a pole or other extension. You can still use a reaching rescue if you can reach far enough with your own hand to grab them. You can also use a special device, called a shepherd's crook, which is a pole with a large loop at one end, often available at hotel or other semiprivate pools. The loop may be placed within reach of an active victim, but can also be used to snag passive victims and draw them to the side. As with a simple pole, sweep the hook into position from the side. Do not use a shepherd's crook if you suspect that the person is passive due to a neck or spinal injury.

Intuitively, the hook may be positioned around the victim's torso. That may work for smaller victims who are nearly vertical in the water. For larger victims floating in a prone position, it may be more practical to place the hook under one armpit and pull the victim in at a slight angle. A second rescuer may need to assist as the victim is brought to the side, particularly if the pool deck or pier is above the water line.

The use of a shepherd's crook to retrieve a passive victim who has sunk part way or all the way to the bottom may be more difficult, particularly if the water is murky. Rather than fumble about to perform the rescue from shore, it may be more expedient for trained swimmers to perform an in-water rescue. Since passive victims may not be breathing, prompt removal to a location where CPR can be performed is indicated. One of the challenges of water rescue is to match the response to the situation, including the knowledge and skill of the rescuers.

Throwing Rescues

If a victim is beyond reach of a hand or pole, a throwing assist may be used for some active victims. Throwing devices appropriate for unit swim protection include ring buoys, boat cushions, and life jackets. Other items, such as boat fenders and plastic jugs, may be used if they provide enough buoyancy to support a person, are relatively easy to toss, and are easy to grab. (For example, a soccer ball is not as easy to grasp in the water as other devices.)

Ideally, thrown flotation aids should land close to victims without hitting them. Tired and distressed swimmers may be able to move a few feet to compensate for an inaccurate toss. However, active drowning victims will not. If the device does not make contact, they will be unable to reach for it. Such accuracy may be difficult to achieve. Also, throwing assists are not appropriate for passive subjects. **Therefore, unit swim protection cannot rely solely on throwing devices.**

Throwing rescues may not be essential for shore-based assists at small residential and hotel pools since reach poles may provide sufficient coverage for active victims in deep water areas.

A ring buoy with a line attached allows more flexibility than the buoy alone. Such a device may be handy at a lake swimming area with rescue personnel stationed on a pier or floating platform. However, practice is needed for accurate use.

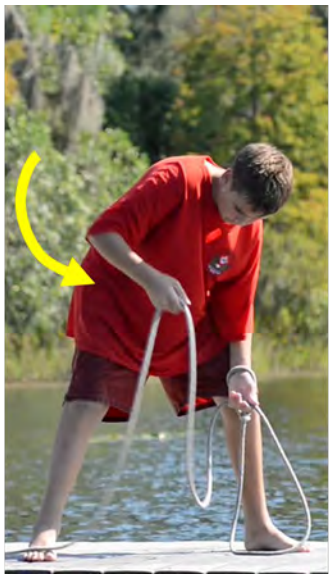
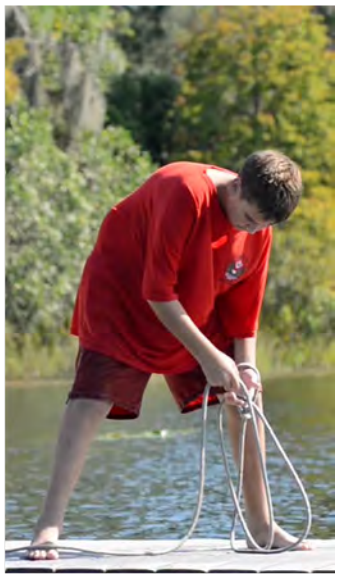
To throw a ring buoy:

- Grasp the buoy itself in your throwing hand and hold the coil loosely in your other hand.
- Stand facing the victim and step back with the leg on your throwing side.
- Swing your throwing arm back, then forward.
- Release the buoy when your throwing arm is about level.
- Allow the rest of the line to play off the open palm of your other hand.
- Aim for the buoy to hit the water beyond the victim's shoulder
- Pull the buoy to the victim and shout for the victim to grab hold. You may need to move along the shore to angle the line to pull the buoy within the victim's reach.
- Reach out with one hand to grip the line with your thumb inward, then alternate arms to pull the victim to safety.

If the line plays out clearly, but your aim is off, you do not have to re-coil the line for a second throw. Instead, drop the line at your feet as you pull the buoy in and then try again. Keep your eye on the victim rather than watching the line. It may be prudent to switch to a different means of rescue, depending on the condition of the victim and the skills of the response team.

It is fairly common for the line to snarl during a throw if the line is not properly prepared and maintained. That in turn prevents the buoy from reaching the victim. Some ring buoys come with the line stored in a fabric bag or in a plastic handle. However, the line for many buoys at various locations is gathered in a loose clump. Anyone relying on such a device for unit swim protection should re-coil the line before it is needed.



To coil the line for a right-handed throw, place your left hand on your left knee and slide your right hand along the line to the full reach of your arm. Grasp the line and then return the line from your right hand to your left hand to form a loop. Repeat until you reach the buoy. If you leave your left hand fixed to your knee and reach as far as possible each time with your right hand, all of the coils will be the same size and less likely to tangle when thrown. Reverse the directions for a left-handed toss. This technique is normally better than wrapping short coils on your forearm or moving both hands apart and then together.

It is important that the end of the line does not get thrown into the water. To prevent that, tie a loop with a bowline knot in the end of the line and slip it over the wrist of the hand that holds the line. Make sure that the loop is loose enough that it will easily slip free if pulled.

You may find a ring buoy with a large plastic bead, called a "lemon", on the free end of the line rather than a wrist loop. If that's the case, you are meant to stand on the line with the lemon behind your foot. The wrist loop is easier to use, particularly if you're moving with the ring buoy to get to a better position for throwing or need to move along the shore to pull the buoy toward the victim after a toss. One reason for placing a lemon on the line is to lessen the possibility that a nonswimmer using the buoy could be jerked into deep water. Response personnel at unit swims must be good swimmers and should be able to avoid being pulled in with either means used to keep the end of the line out of the water.

The throw bag, or rescue bag, is a common throwing device often carried on canoes and kayaks. It may be available at unit swims during float trips and makes a good addition to a unit safe swim kit since it is an easy way to store and transport a line. The bag does not have sufficient buoyancy to support a person and is commonly deployed for endangered swimmers in whitewater. Its use is described in the boating section of this manual.

For a unit swimming activity, a throw bag may be better utilized to hold the line for a line-and-tender rescue rather than primarily as a throwing device. The line-and-tender procedure is covered later in this chapter.

Rowing Rescues

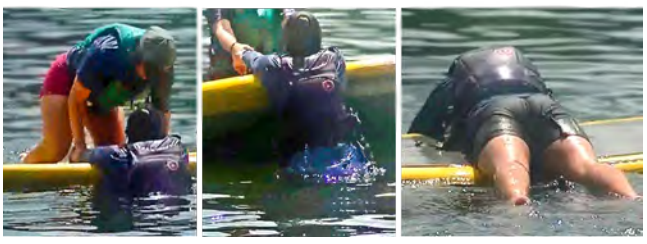
The term "rowing rescue" refers to the emergency use of any type of small, human-powered craft, such as rowboats, canoes, or kayaks. Boats may be appropriate tools for swimming site protection in natural water bodies when the entire area cannot be viewed or accessed easily from shore or a pier. Snorkeling in open water is one such situation. Blind spots behind aquatic attractions are another. Basically, the boat serves as a movable platform from which reaching and throwing assists can be implemented. Challenges include how passive victims are recovered and moved to safety. Specific skills needed to maneuver various craft are discussed in the boating section of this text.

Purpose-built rescue boards, similar to surf boards, are sometimes used by lifeguards at lake and ocean beaches. Rescue board techniques using surfboards, stand-up paddleboards without a paddle, or windsurfers without a sail, can be considered for unit swim protection at non-surf beaches.

To use a board for active victims:

- Approach the victim from the side while paddling with your hands from either a prone or kneeling position
- Slide off the board on the opposite side and push the side of the board to the victim
- If necessary, reach across the board, grasp the victim's wrist and pull the victim to the board
- Make sure the victim has a secure hold on the board, provide assurance, and evaluate the victim's condition.
- If shallow water is nearby, use your legs to move the board and victim to safety.
- If needed, help the victim lay prone, centered toward the front of the board, facing forward
- The rescuer then lays on the back of the board and uses arms, legs, or both to move to safety.

For passive victims, flip the board as you slide off. Pull the victim's hands across the board until their armpits are against the rail. Roll the board toward you to pull the victim across the board. Then carefully move the victim to rest lengthwise on the board.



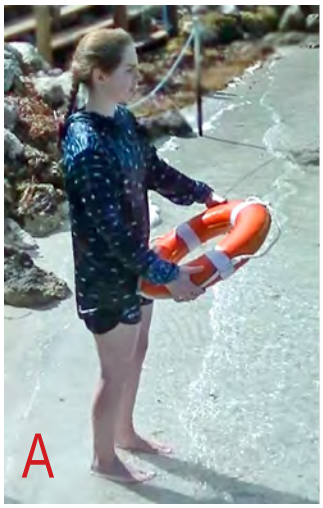
GO Rescues: In-Water Assists

In-water assists may be divided into two classes, depending on the need to touch, or contact, the victim. In non-contact swimming assists, the victim grasps a flotation aid you provide. In contact rescues, you grasp the victim and the aid. Non-contact rescues are the first choice for active victims. Contact rescues are required for passive subjects, at or below the surface, and those with a suspected spinal injury, but may also be needed for victims with seizures or other debilitating conditions. Either type of in-water rescue should be performed only by skilled swimmers with proper planning, equipment, training, and support. Both non-contact and contact rescues should follow this progression:

1. **Recognition and initial assessment**
2. **Activation of an Emergency Action Plan (EAP)**
3. **Water entry with rescue aid**
4. **Approach to victim**
5. **Updated assessment**
6. **Provide support**
7. **Move victim to safe exit**
8. **Move victim from the water**
9. **Final assessment**
10. **After care as needed**

Details vary depending on the situation, and may evolve as the rescue proceeds, so each item in the progression will be discussed separately. However, it is first useful to illustrate the steps with specific examples.

In-Water Rescue for Active Victim **(contact avoided)**



A. While scanning her assigned swimming area with a flotation aid at the ready, a responder notices an active victim and activates the EAP.

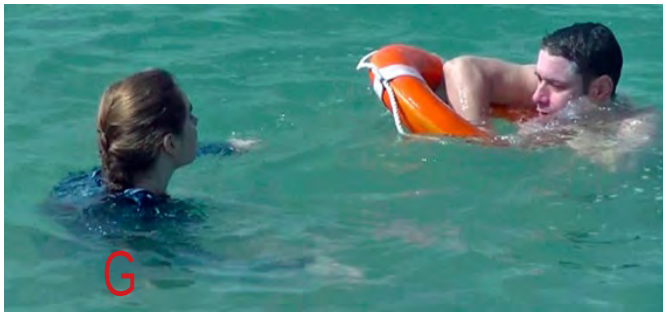
B. Responder quickly enters the water with the flotation aid. A running beach entry is good for this location.

C. When the water becomes too deep for a rapid running approach, responder swims flotation aid toward the victim. In this case, the aid is pushed forward with a breaststroke kick. The head is kept above water to allow a continuous view of the victim.

D. Responder pauses momentarily just out of reach of victim to reassess victim's condition and the best way to continue the rescue. This "***ready position***" also allows the rescuer to provide simple verbal instructions to the victim.

E. Responder pushes flotation aid into victim's grasp. If a distressed swimmer moves toward the aid, the rescuer can shove the aid toward the victim and release it so that it moves forward due to momentum. For active drowning victims who are unable to reach for the aid, the rescuer should push it directly into the victim's chest.

F. As soon as the victim grabs the flotation aid, the rescuer should release it and back off. The goal is to keep the aid between the responder and the victim so that the victim grasps the aid rather than the rescuer.



G. Once the victim has a firm grip on the flotation aid, the urgency of the situation is reduced. The responder should speak to the victim to judge their condition and ability to assist with completing the rescue.

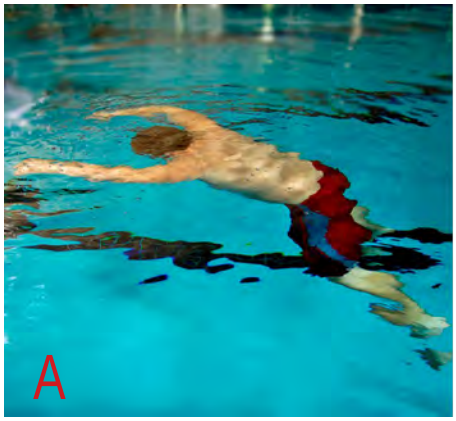
H. If the victim is reasonably calm and has sufficient energy and skill, have them kick themselves to safety while you lead the way from a distance. Continue to provide verbal assurance and encouragement. This is known as an "***accompanied rescue***" by various Royal Life Saving Societies (RLSS).

I. If the victim needs help moving to safety while clutching the flotation aid, tell them to continue to hold on and that you will be touching the aid so that you can pull them to safety. Continue to provide verbal assurance as you tow, ideally with a side stroke with your arm extended. RLSS agencies call this a "***non-contact tow***". (The rescuer is in contact with the aid but not the victim.)

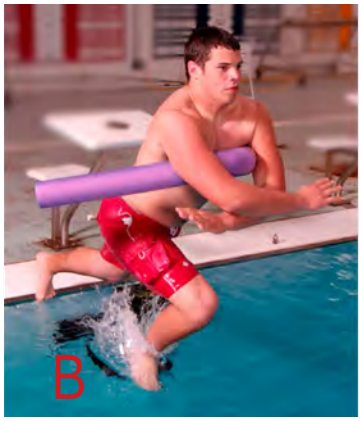
J. Once you reach shallow water, ask if the victim can stand and walk the rest of the way. If so, allow them to do so. If they have any physical problems that led to their distress, or lack the energy to walk on their own, assist the person from the water and provide aftercare. Other safety team members may help.

In-Water Rescue for Passive Victim **(contact needed)**

This sequence assumes the victim is spotted by the rescuer after suddenly going limp due to a medical emergency. Active victim rescues should be implemented for active drowning victims prior to them becoming passive. Family or bystanders may first notice a passive drowning victim in the water after a brief, unobserved struggle. That is a fairly common drowning situation encountered by lay rescuers, but should not occur at a supervised swim.

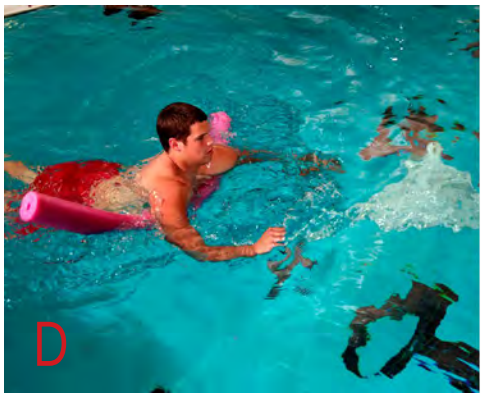


A. Responder notices a passive victim and activates the EAP. Other safety team members assess situation and call EMS while rescue is in progress.



B. Responder enters water. In this case using a stride jump with a pool noodle as a rescue flotation aid.

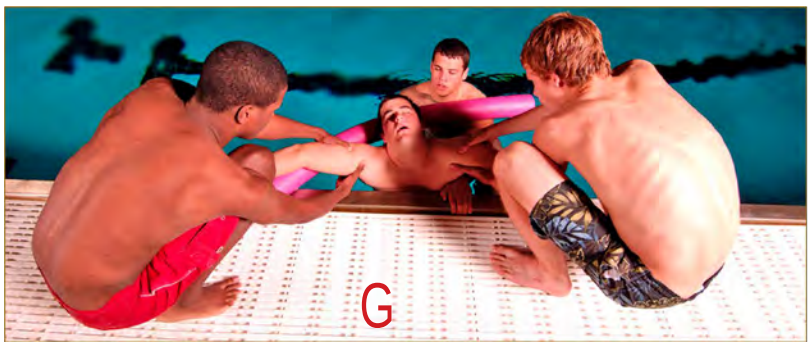
C. Responder rapidly approaches victim using a modified breast stroke while keeping victim under observation.



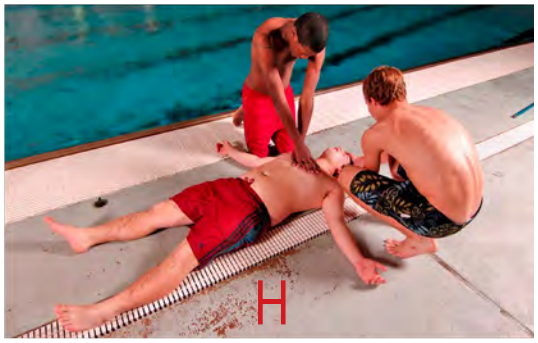
D. Responder assumes ready position when near victim. Shouts “Are you OK” and splashes victim to check responsiveness.

E. Responder grasps wrist of victim to use wrist tow procedure to place victim on flotation aid.

F. Responder switches to double armpit tow to move victim to closest exit point.



G. Other safety team members help remove the victim from the water. Here the three responders are preparing for a vertical lift.



H. Once on deck, the victim is checked for signs of life and appropriate care is provided until EMS arrives.

Rescue Flotation Devices

The Lifesaving merit badge pamphlet trains lay rescuers to quickly look for appropriate rescue aids after they identify an emergency and decide to act. Swimming and Water Rescue training instructs the adult supervisor and response personnel to identify and deploy appropriate aids prior to allowing anyone in the water during a unit swim. Each independent responder should have a separate device.

Rescue tubes and ***rescue buoys*** (or cans) are commonly used at venues that employ lifeguards. Both have shoulder straps and lanyards. Most rescue tubes have a snap on the end that allows the tube to be fastened around a victim. The rescue tube is more suitable for the passive victim rescues that are described in this manual. Both are appropriate devices for unit swim protection. However, they are not typically found at unguarded residential or hotel pools or designated swimming areas in natural waters.

Various other buoyant items can be used as effective alternative rescue flotation devices, such as pool noodles, ring buoys, and throwable boat cushions. Pool noodles can be used similar to rescue tubes. Thicker versions are generally better than thin ones. They are inexpensive and commonly available. Ring buoys and boat cushions also serve as throwing devices. Ring buoys are often required at hotel and other semi-private pools. Recreational motor boats are required to carry a either a throwable cushion or ring buoy.

Various styles of life jackets may also serve as rescue flotation devices and are often available for aquatic activities. Adult sizes provide more buoyancy than smaller sizes. Zippers should be fastened and straps clinched tight for use as rescue aids.

Other types of buoyant devices may be used as well, such as boat fenders, kick boards, tubes, floats and aquacise equipment. Some sleeping pads may be rolled and strapped for use on camping trips when other aids are not available.

Key considerations for alternate rescue flotation devices include overall buoyancy, size, weight, ease of use, and how well a victim can grasp and hold the object. Some devices provide better support for passive victims than others, as will be seen in the section on rescue procedures for such victims.

Recognition / Assessment / EAP Activation

At a swimming activity where the unit is responsible for emergency response, the qualified supervisor is charged with developing a plan of action and explaining it to designated response personnel prior to need. After response personnel identify a person in need, the plan should describe how they communicate that need to others before entering the water to perform a rescue. Additional details are covered in the next chapter on safety team preparation.

Entries

A safe unit swim area should have safe locations to enter and exit. Response personnel should to be stationed near those locations, which in natural bodies of water may not surround the entire swimming area.

This section assumes that the area is free of hazards, that water depths are known, that responders do not need to enter the water from heights greater than 3 feet, and that rescue flotation devices are available. The goal of all entries is to quickly and safely move toward the victim while keeping the victim in view.

Which entry is most appropriate will depend on several factors, such as water depth and bottom conditions.

Run-and-Swim Entry

If the swimming area is bordered by a shallow, gentle slope with a firm bottom, such as a sand beach or zero-depth entry pool, enter at a run. Lift your legs high and hold your rescue aid out of the water. As the water deepens and running becomes difficult, lie on the surface and kick off the bottom. You can lie on a body board or air mattress, hold a rescue tube or noodle across your chest, or push a ring buoy or seat cushion ahead of you. Keep the victim in view.

Ease-In Entry

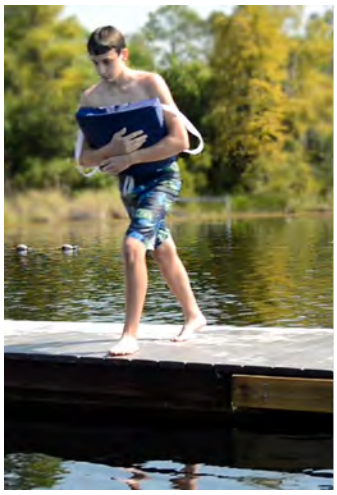
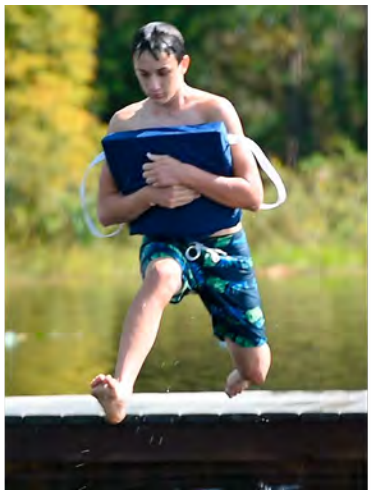
An ease-in entry is generally applicable from pool side, pier, or shoreline with an abrupt drop into either shallow or deep water. It is particularly appropriate when the victim is just beyond reach from shore. Crouch down while holding your flotation aid in one hand and placing it on the side or in the water. Brace yourself with one or both hands and either spring in from a squat, or sit and then slide in. Variations in the technique are known as slide-in, touch-and-go, or waveless entries. Double check that the entry area is clear, then focus on the victim.

Compact Jump

The compact jump may be used from low heights into moderate water depths or from higher decks or piers into deep water. Bend at the knees with feet together. Keep your legs flexible and feet flat to absorb shock in case of bottom contact. Hold a soft rescue device across the chest. Make sure lines and straps are not tangled or caught on obstructions. In deep water, your head will submerge. Re-locate the victim as soon as you surface.

Stride Jump

The stride jump, or leaping entry, allows you to keep the victim in sight as you enter deep water. It can be used from low heights, less than 3 feet, into unobstructed water at least 5 feet deep. Begin as if you were trying to reach the victim in one giant step. You want to move out, not up. Practice first without a flotation aid to master the technique, as shown in the chapter on swimming skills. Hold rigid aids in one hand to the side. Hold soft aids under your arms or against your chest.


Spring outward while leaning forward with your legs spread front and back in a scissors position. Snap your legs together as they enter the water. If the entry is done well, your head will remain above the water. However, it may take several practice tries until you learn the proper timing.

Approaches

The approach will generally be in a straight line from the entry point to the victim. Frequent visual observation should be maintained in case the victim submerges before being reached. Always give verbal instructions and encouragement when approaching a conscious victim.

The victim and rescuer will often be facing each other, and many rescues can be initiated from a front approach. Other rescue techniques require rescuers to position themselves behind the victim in a rear approach.

Adapt your swimming stroke to the condition of the victim, the condition of the water, the type of aid being carried, and the distance. For long distances, rescue tubes and buoys may be trailed behind the swimmer. For distances common at unit swims, flotation adds may be pushed forward or positioned across the chest.

Use a modified crawl or breaststroke with the head up. Generally, the breaststroke is more flexible and the whip kick is more powerful than a flutter kick. A single-arm stroke may be used if the aid is pushed forward with one hand.

As you finish the approach, just before you assist the victim, stop out of reach, speak to the victim, and reevaluate the situation. Splash apparently passive victims.

At times the details of the approach stroke will be unimportant: for example, many backyard, apartment, and hotel pools are so small that the entry and approach are simultaneous.

Rescues for Active Victims

There are several variations in how a rescue flotation device can be used to assist an active victim in deep water. One possibility is to use a contact tow in which the rescuer grasps the victim from the rear and holds them against the rescue aid while moving to shore. That technique is perhaps applicable to the widest range of victims, and is discussed here, but it is not the simplest or safest procedure and requires more stamina than others. Reviews of actual rescues reveal that many active victims will grasp flotation aids extended to them. That, in turn, leads to the following options:

Accompanied Rescue

In an accompanied rescue, the victim is allowed control of a flotation device provided by the rescuer. There is minimal risk of the victim grasping the rescuer, and the victim has the maximum support of the aid. The victim must be conscious and able to assist after becoming stable on the device. The aid must be buoyant enough to support the victim. This technique is suitable for a tired swimmer and may be attempted for all active victims. You should maintain a distance between yourself and the victim and be ready at all times to release the aid, duck beneath the water, and move away.

From a ready position, provide simple instructions and encouragement to the victim, for example: "GRAB THE FLOAT".

If the victim reaches for the aid or begins to move toward you, shove the float toward them while you back up.

After the victim becomes stable on the float, reassure them that they are safe and ask if they are able to kick their way toward shore. If the victim can do this, provide encouragement and patiently escort them to the closest point of safety. That may not be the same place where you entered the water.

Don't assume that all victims will be able to reach for the aid. If they do not respond to your approach, continue to push your flotation device towards them with your arms fully extended.

Wait until their head is above the water and push the aid into their chest. You may need to drive them backwards momentarily until they are able to grasp the aid. Let go of the aid and back up as soon as the victim has a firm grip on the aid or the victim attempts to grab you.

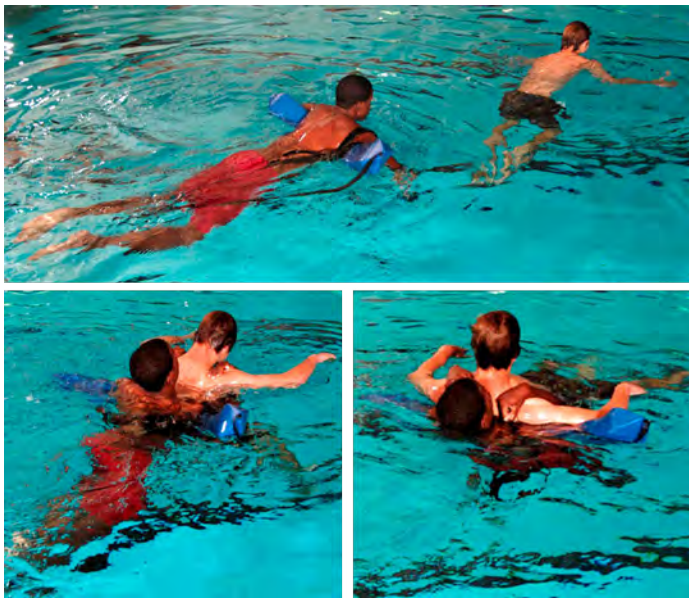
After the victim is supported by the aid. Check if they are able to move to safety on their own. If so, swim near the victim and encourage then as they move toward safety.

Noncontact Tow

If the victim is unable to make progress toward safety but can communicate and support themselves with the aid, wait for them to grow calm. Then decide how best to tow them to safety. Always tell the victim in advance what you intend to do. Grasp the flotation device with one hand, extend your towing arm, and begin stroking away from the victim while holding onto the aid. Use a sidestroke for the tow. Continue to reassure the victim and encourage them to kick if appropriate. Watch for signs of exhaustion or panic. If the victim panics and tries to reach you, release the aid, quickly move away, and reassess the situation. Resume the tow only when it seems safe to do so. At a unit swim, a second rescuer with another aid should be ready to assist if the first responder encounters any difficulty. This procedure is known as a noncontact tow since the rescuer is in contact with the flotation aid, not with the victim.

Contact Tow for Active Victims

Some victims who are injured or suffering a medical emergency, such as a stroke or seizure, may not be able to grasp a flotation aid even though they are conscious and may momentary keep their heads out of the water enough to breathe. In that case, responders should switch from a front approach to a rear approach with a flotation aid across their chest. The technique works best with soft aids such as rescue tubes, noodles, or boat cushions - less so with rigid devices such as rescue buoys or ring buoys.



The rescuer scoops both arms simultaneously under the victim's armpits and firmly grasps the victim's shoulders. The rescuer then leans back to pull the victim onto the flotation aid which is clamped between the victim's back and the rescuer's chest. Rescuers may need to keep their own head low and to the side to avoid being hit by the victim's head.

Rescuers should keep the victim's mouth and nose clear of the water during the tow to safety and offer encouragement throughout the rescue.

The rescuer's grasp on the victim is known as a ***double armpit tow*** and will also be an option for passive victims. Note that the rescuer needs a strong kick. A whip kick or rotary kick is generally more effective than a flutter kick.

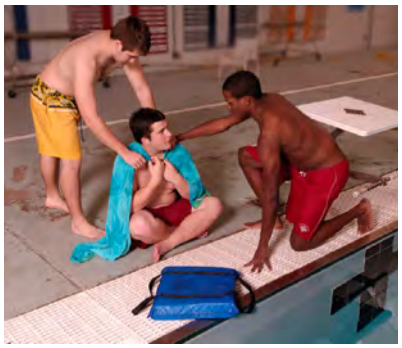
Exiting the Water - Walking Assist for Conscious Victim

A conscious victim may be able to exit the water without help once they get sure footing on the bottom or a firm hold on a ladder. If the victim is exhausted, has trouble with their footing, or a medical impairment, you can help them ashore using a walking assist. While standing at their side, help them to stand and to place one arm across your shoulder. Grasp the wrist of that arm with your outside hand, and wrap your free arm around their back. Then walk slowly together to shore. If the victim is much larger than you, a second person can help from the other side.

If the victim is unable to stand, then removal techniques for passive victims may be needed.

Aftercare for a Conscious Victim

A victim who has been conscious throughout the rescue still needs to be evaluated. If a serious medical condition, such as a stroke, led to the incident, summon EMS immediately or arrange for evacuation from a remote site. If the victim shows signs of hypothermia, provide warmth. Be sympathetic to their mental state. Offer reassurances rather than criticize actions that lead to the situation. If the victim appears traumatized, be attentive, move them to a comfortable environment, and notify family members.



Rescues for Passive Victims

If the victim is passive, apparently unconscious, in the water either at or beneath the surface, then the rescuer will need to make physical contact with the victim. Different techniques are appropriate depending on the situation. Speed is essential. Any victim who is likely not breathing has a small time window to allow a full recovery.

A victim suffering hypoxic blackout or other debilitating medical emergency may be in shallow water. In that case, a wading rescue is suitable. Walk to the victim, lift them from the bottom, and hold their head clear of the water while moving to safety.

In deep water, a rescuer approaching a victim from the front may elect a different rescue procedure than a rescuer approaching a victim from the rear. Each procedure can be adapted for use with select flotation aids, but may also be used without an aid, for example, to bring victim submerged in deep water to the surface. During training, each technique should be practiced both with and without an aid, and for victims both at and below the surface.

A front or rear approach can always be turned into the other simply by swimming around the victim. However, that might also necessitate reversing direction to reach safety after the victim is in tow. The different techniques presented here provide the rescuer with options. Those assigned to emergency response at a unit swim site need not be equally skilled in all the techniques, so long as they know at least one method to handle any likely situation. Just before a unit swim, assigned rescue personnel may need a practice drill to refresh their memory and reconfirm their ability. For large groups, limiting the drill to the safety team is probably appropriate prior to everyone else arriving. For a small group, the drill can be a teaching moment for everyone.

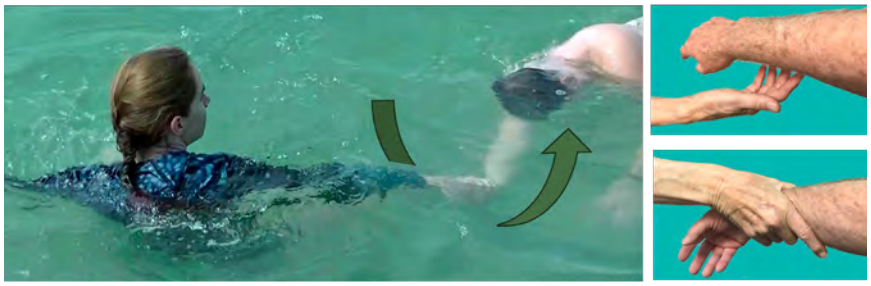
Wrist Tow without a Flotation Aid (Front Approach)

The wrist tow may be used when you approach a passive victim from the front and the victim's arm is within reach. It can be applied for victims at the surface, floating beneath the surface, or resting on the bottom.

First confirm that the victim is passive, then come within an arm's length.

Reach across to the victim's opposite wrist as if you were shaking hands. You may need to reach down if the victim's wrist is not at the surface. Grasp the underside of the victim's forearm just above the wrist with your palm up.

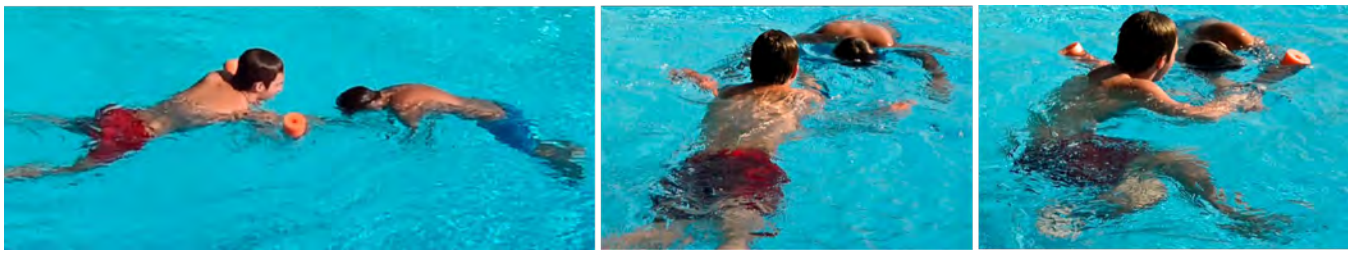
Hold firmly and roll your wrist by turning your thumb and elbow up and over as you begin your tow. That twist should turn the victim onto their back.



Maintain the same grip as you tow the victim to safety with a sidestroke. A slight tension in your arm is needed to keep the victim face up. Both your towing arm and the victim's arm should remain straight.

Wrist Tow with a Flotation Aid (Front Approach)

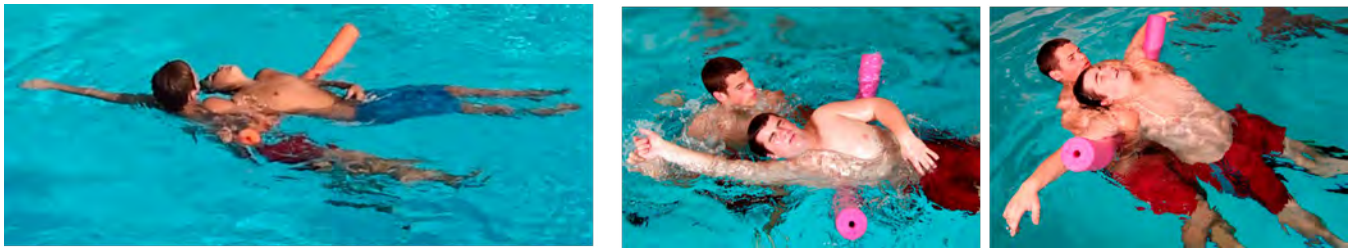
The wrist tow can also be used to place an appropriate flotation aid under the shoulders of a victim at or near the surface, followed by an over- the-shoulder or double armpit tow.



During the final approach from a ready position, hold the aid with one hand while you reach across it with the other. Grasp the underside of the victim's forearm just above the wrist with your palm up. Lift up slightly and pull the victim toward you as you twist them onto their back. Shove the float beneath them as they turn.

Rotate the victim face up with the flotation aid positioned to hold the victim's face out of the water. If you are close to the edge of a pool or a low pier, use your legs to move the victim to the side and allow a second responder out of the water to grasp the victim's extended arm.

If you need to tow the victim some distance to safety, then reach one arm over the victim's shoulder and grasp the flotation aid. Use a modified side stroke to move the victim to safety.



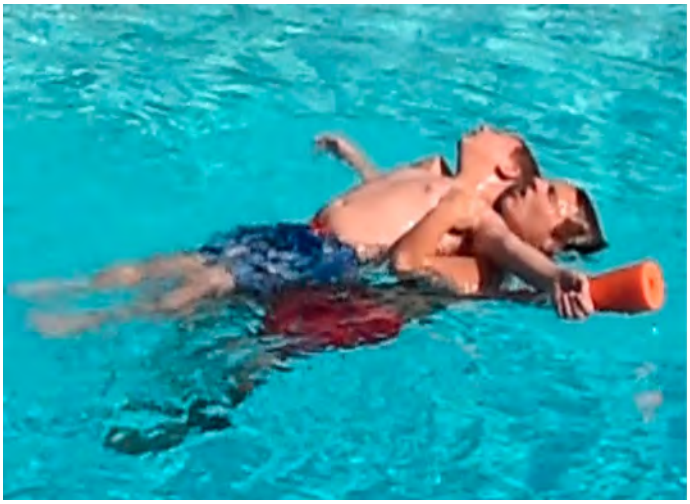
A single over-the-shoulder tow should be appropriate for most passive victims when using rescue tubes or swim noodles in calm water. However, if you have difficulty balancing the victim on a flotation device, such as a boat cushion, then a double armpit tow may also be used. Response personnel assigned to unit swim protection should practice until confident they can perform a passive victim rescue, either from the front or the rear, using devices available.

Armpit Tow (Rear Approach to Passive Victim)

A passive victim face down at or very near the surface can also be approached from behind, with or without an appropriate flotation device. Confirm that the victim is unresponsive, then reach out with both arms to scoop under the victim's armpits to grasp the victim's shoulders. If the victim is horizontal rather than vertical, the rescuer may need to be positioned high on the victim's back. A rescue tube or noodle is initially held across the rescuer's chest and then squeezed between the rescuer and the victim.

If the victim is small, and the direction to safety is behind the rescuer, the rescuer may lean backwards to lift the victim's face out of the water, similar to the technique used for a contact tow for an active victim. However, it is generally easier for the rescuer to roll a passive victim face up.

While firmly grasping the victim under both armpits, the rescuer takes a breath and then dips one shoulder to rotate beneath the victim to roll the victim face up. The rescuer's head will be to one side after the roll and the rescuer should avoid being hit by the victim's head during the roll.



If a flotation device has been used, it should be positioned to hold the victim's face clear of the water while providing support for both the victim and rescuer. If a flotation device is not used, the rescuer will need a strong kick to support the victim while moving to safety.

If the distance to safety is small, as is likely the case in small residential and hotel pools, the rescuer can tow the victim to safety using the double armpit tow without changing direction. For greater distances, or if a change in direction is needed, the rescuer can switch to a single over-the-shoulder tow. That allows the rescuer to use one arm for swimming while grasping the victim and float with the other.

Victims Wearing Life Jackets

Life jackets may be worn to add an extra margin of safety for unit swimming activities. If so, both participants and responders should be so equipped. Properly fitted life jackets should forestall the need to assist active victims who otherwise could not maintain themselves at the surface. Life jackets should also prevent the need for a responder to go underwater to recover a submerged victim.

However, a victim incapacitated by a medical emergency may still need assistance. In that case, responders should roll the victim face up if needed and then grasp the victim's life jacket between the shoulders. A side stroke may then be used to tow the victim to safety. If the victim needs CPR, their life jacket will likely need to be removed.

Submerged Victims

Passive victims not wearing a life jacket will likely submerge if rescue is delayed only slightly. Unconscious victims can come to rest anywhere between the surface and the bottom. If the victim is floating just below the surface, you can reach down and use the wrist tow to bring them up and forward. If the victim is deeper, you will need to use a surface dive to get closer. A headfirst surface dive may be used in deep, clear water. A feet-first surface dive may be more appropriate in murky water. Review the chapter on swimming skills for surface dive techniques. If you have a flotation aid, leave it at the surface.

Grasp a submerged victim in any logical manner, either by the wrist, under one arm, under both arms, or across the chest. If the victim is on a firm bottom, you can shove against it with your legs to help you up.

Victims recovered from underwater may be towed directly to safety without taking the time to retrieve a flotation aid and place the victim on it. Rescue breathing is likely needed as soon as possible.

The rescuer should adjust whatever grip was used to bring the victim to the surface to effect a tow that keeps the victim's face clear of the water. A wrist tow is one possibility.

Single and double armpit tows may also be used. Rescuers may hook their elbows under the victim's arms to grasp the top of the shoulders, or simply grasp the victim's armpit with their hands.

A cross chest carry is another option. The rescuer reaches across one of the victim's shoulders to grasp the victim's opposite armpit. Alternately, the rescuer may reach under both of the victim's arms. A rescuer may need to support the victim's buttocks on the rescuer's hip to keep the victim reasonably level for towing with their head clear of the water. Both of these options require strong swimming skills and stamina.

Only a few strokes are typically needed to reach safety in a small pool. However, if there is an extended distance to safety, or the victim is too large for a particular rescuer to tow easily, then the rescuer may elect to use a flotation aid. At a unit swim, the aid may be provided by a second rescuer.

NOTE: The contact tows just discussed are for passive victims. They are appropriate for submerged victims, but may also be considered when unresponsive victims cannot easily be supported by available flotation aids. The techniques are NOT advocated for use with active victims. Some of the skills have been used historically by lifesavers lacking suitable equipment to assist active victims. That situation should not arise at unit swims.

If individual rescuers are unable to locate a submerged victim in murky water after one or two surface dives, they should signal for help. The initial rescuer should continue searching near the spot the victim was last observed on the surface. That marks the spot around which other responders can expand the search. A search for a missing swimmer in an unknown location is more difficult than the response for an observed submersion.

Missing Submerged Victims

The rescue techniques discussed above assume prompt emergency recognition and response. However, what happens if a buddy check reveals a missing person or a missing buddy pair? If that happens, several Safe Swim Defense safeguards have failed. Despite preventive measures, a crisis developed that neither buddies nor the safety team (lookout and responders) were able to recognize. That should seldom, if ever, happen. However, the count taken during a buddy check provides a final alert mechanism. For Safe Swim Defense to work properly, that final safeguard must be unambiguous. If the unit leader first assumes that the missing person or persons simply wandered off on land, and searches there first, then that leader has not properly implemented Safe Swim Defense standards for an accurate, current count of everyone in the water. If Safe Swim Defense guidelines are in place, then a missing person during a buddy check means a person is submerged in the water, and that is a major life-threatening emergency with the clock ticking ominously.

If the water is clear enough to see the bottom, then a search from the surface is relatively quick and easy, either from the side or from swimmers in the water. The first region to search is the ability area where the missing person was assigned. The search should then widen to cover the other ability areas and also just outside the boundaries, under docks or in other restricted zones. If there is a current, first check the downstream perimeter.

If the bottom cannot be seen from the surface, then the situation is much more difficult and may be further hampered by waves or a current. In shallow water, use a line search with swimmers linking arms and traversing the area while shuffling their feet. Once anyone in the line gets to chest-deep water, the line should be directed back into shallow water. Crisscross the area until the subject is found or each part of the area has been searched at least twice.

In deep water, only reliable, competent swimmers should be used in an underwater search for a missing submerged victim. An underwater search in turbid water is difficult and not without risk to the rescue team. Time is critical. A prompt search with a few prepared individuals is better than a search delayed trying to organize and instruct a large team.

The divers form a line, surface dive together to the bottom, scour the bottom with their hands for a set number of strokes (typically three), and then surface. Buddies are checked every time the line surfaces. The line then reforms, backs up a bit, and dives again.

The adult supervisor should not allow the search to continue beyond the point that rescuers become exhausted. In anticipation of such difficulty, a unit swimming area in turbid water should be small enough in area, and shallow enough in depth, that the number of available search personnel can cover the bottom rapidly. If the unit leader is not confident in preventing the need for, and of performing a safe, rapid, and effective underwater search in murky water, participants may be required to wear life jackets to minimize the possibility that anyone will submerge. Another option is to limit water depths to around 4 feet and less so that the entire area can be searched by a line of waders. Additional detail on how to conduct a search for a missing swimmer is covered in lifeguard training programs that include waterfront modules.

Landing a Passive Victim

A passive victim needs to be moved as quickly as possible to a location where breathing and pulse can be monitored and CPR performed if necessary. It is sometimes possible to start rescue breathing in shallow water or at the side of a boat. If that is not practical, or CPR compressions are needed, remove the subject from the water and position on a rigid surface. Removing a passive victim from the water often requires more than one rescuer and may be easier if the victim is first towed to where the rescuer can stand.

Shallow Water Lifts

Many adults can cradle a small child in their arms to carry them from the water or lift them a short vertical distance unto a pool side or low pier. That should work well for a 40 pound Lion Cub Scout, less so for a 6 foot 2 inch, 240 pound linebacker. In the later case, two or more responders may be needed to safely lift and move victims onshore.

Beach Drag

A drag is a relatively easy and safe way to remove a passive victim where there is a zero depth exit with a smooth sloping bottom. During the tow, the victim will be on their back. Once your feet touch bottom, grasp the victim under their armpits and pull them onto the beach by slowly walking backward. If the victim is small enough, you can hold them against your chest with your back straight. That will lift them progressively out of the water as you move shoreward while dragging their feet. You can lock your hands across the victim's chest, grasp the victim's wrists with their arms crossed, or reach under the victim's armpits and grasp the top of their shoulders. Gently lower the victim to the ground once clear of the water.

If the victim is too large to easily lift clear of the water, squat as you move shallower to allow the water to help support the victim's weight. Cradle the victim's head with your forearms to keep it clear of the water as you "duck walk" backwards until the victim's body bottoms out. Continue to drag victims until at least their heads and shoulders are out of the water. A second responder can help pull large victims onshore.

Vertical Lift

This technique is used for passive victims at the vertical edge of a pool or low pier, or at a steep lake edge or riverbank. It needs from one to four people depending on the relative size of the people involved, the condition of the bank, and the depth of water at the edge. Ideally, two responders will be onshore above the victim with one or two in the water helping to support the victim.

The initial rescuer tows the victim to the side and holds them facing the edge while the others get into position. The rescuers onshore crouch and each grasp one of the victim's arms, as near the armpit as is comfortable. If the water is shallow enough for them to stand, the rescuers in the water prepare to lift on each side of the victim's hips. On a signal, the rescuers lift the subject until their hips or thighs are level with the side. The victim is then lowered facedown to the ground with care taken to protect the head.

Next, roll the person onto their back. However, first make sure the hips are firmly supported. That may require sliding the victim forward or rotating them parallel to the edge.

Backboard Lift

Pool lifeguards are trained to extract passive victims using a backboard with the assistance of a least one other rescuer. Unit members with lifeguard training should know the techniques and may utilize those at unit swims if a backboard is available. The skills are not mandatory in Swimming and Water Rescue training since backboards are seldom available at backyard, apartment, or hotel pools. However, state codes typically require backboards at guarded facilities so they may be present if a unit utilizes such a venue.

The board is sliced vertically down the edge of the pool by an assisting responder near where the primary responder is bringing the victim face up. The primary responder lifts one of the victim's arm which is grasped by the assisting responder along with the board. Ideally, a third responder grasps the victim's other arm. The board is then angled upwards centered below the victim. The rescuer in the water stabilizes the board while the responders on deck pull the board and victim out of the water.

Aftercare for Passive Victims

Anyone who becomes unresponsive prior to or during a rescue is likely afflicted with a life-threatening condition that may require advanced care and evaluation. To minimize delay, members of the safety team should consider summoning EMS while the rescue is underway. After passive victims are brought to safety, they should be assessed by the safety team and provided basic care until advanced care is available.

If a victim becomes responsive, keep them inactive until EMS arrives. Anyone who has lost consciousness or required rescue breathing should be provided advanced medical evaluation. In remote locations, evacuation should be arranged. Anyone who has aspirated water (that is, inhaled a small amount of water into their lungs) may suffer acute respiratory distress and/or later develop pneumonia. If their need for rescue arose from stroke, heart attack, epilepsy, asthma, or other medical problem, they may require treatment for conditions other than drowning.

Scouting America Swimming and Water Rescue training does not include first aid and CPR since units should already have those resources. Scouting America strongly recommends that all adult leaders and youth capable of performing CPR properly be trained through a nationally accredited organization. That training should cover rescue breathing and AED use as part of the curriculum, and include hands-on demonstration of skills to a qualified instructor. Units are encouraged to have leaders and older youth trained in Wilderness First Aid when activities take them to remote areas where access to advanced care and/or rapid transport is an hour or more away. If a unit planning a swimming activity lacks persons with appropriate first aid and CPR/AED training, unit leadership should utilize venues with professionally trained lifeguards on duty.

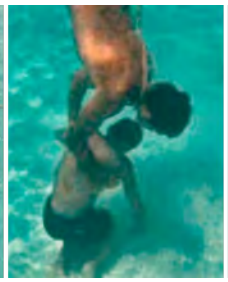
Line and Tender

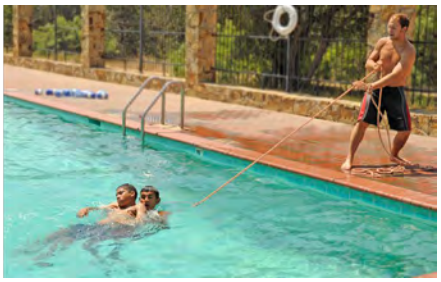
Several of the previously discussed rescue procedures rely on rescuers having sufficient skill and stamina to move both themselves and the victim to safety. The line-and-tender procedure uses a buddy team equipped with a rope to effect a rescue wherein both the rescuer and victim are pulled to shore. The procedure is simple, requires little equipment or training, and provides extra safety for the rescuer. The critical skills are that one person is a good swimmer and that the other have sufficient strength to pull two people through the water.

For an active victim, the line carrier makes an appropriate entry and carries a flotation aid to push into the victim's grasp while providing simple instructions. After the victim has a secure hold on the aid, the line carrier calls for the line tender to pull them in.

If a flotation aid is not available, the line carrier swims past an active victim, turns, and pulls the line into the victim's grasp. The line tender pulls both the victim and rescuer to safety while taking care not to jerk the line

out of the victim's grip. The line tender will need to pull fast enough to keep the victim at the surface. The use of a line by itself is most appropriate for tired or distressed swimmers. If a victim cannot maintain a grip on the line with their head above water, then it may be necessary for the line carrier to grasp the victim. Ideally, line-and-tender teams at a unit swim should be equipped with a flotation aid.



For passive victims at or below the surface, the line carrier must grasp the victim and support them with their face clear of the water while the line tender pulls them both to safety.

The rescue line should be around 1/4 to 3/8 inch in diameter and long enough to cover the swimming area. Braided, rather than twisted, line that floats is preferred. The line used in most throw bags is ideal. To prepare the line, a bowline loop is tied in the free end and placed over one shoulder and under the opposite arm of the line carrier. The loop should be snug enough to ensure that it will not come off while the line carrier is swimming or being pulled in.

The rescuer tending the line is responsible for feeding out the line to prevent tangling as the line carrier delivers the line to the victim. The line should be kept ready in a neat, loose coil or in a throw bag. The line tender pulls in their partner and the victim hand-over-hand, grasping the rope with thumbs inwards to kink the rope to prevent it from slipping. The line tender should be well braced.

The procedure should be practiced until both team members are capable and confident in their roles. Unit members should understand the procedure and know to "clear the way" when the team is responding. Note that the line-and-tender rescue is a First Class rank requirement.

The line-and-tender procedure is appropriate wherever there is a clear expanse of deep water beyond easy reach from pool side, shore, or dock, particularly if team members have limited rescue training. The procedure is not recommended when there are obstructions, such as submerged trees. However, such conditions would violate the criteria for a safe area.

More than one line-and-tender team may be stationed as needed along the shore, on a pier, or on a detached floating dock. However, other response personnel may depend on reach poles, a boat, or a flotation aid rather than a line. A line-and-tender team need not be deployed in all situations. Reaching and wading rescues may provide adequate coverage at many small, residential in-ground or above-ground pools.

In locations with currents, murky water, or water depths beyond those specified in Safe Swim Defense, it is prudent to have line-and-tender teams, as well as swimmers, wear approved life jackets.

Stabilization of Spinal Injury Victims

Diving into shallow or unclear water is dangerous and foolish. The diver risks concussion, spinal injury, permanent paralysis, and death. In pools, diving injuries occur most often when a swimmer dives from the side into shallow water, but can also take place if the diver hits another swimmer or a diving board. When the bottom slopes gently into deep water, a swimmer attempting a shallow dive may hit the bottom, particularly at a surf

beach where the water depth varies between swells. All participants at a unit swim should be warned about the dangers of diving, and only allowed to enter the water headfirst if the height, water depth, and water clarity conform to Safe Swim Defense guidelines.

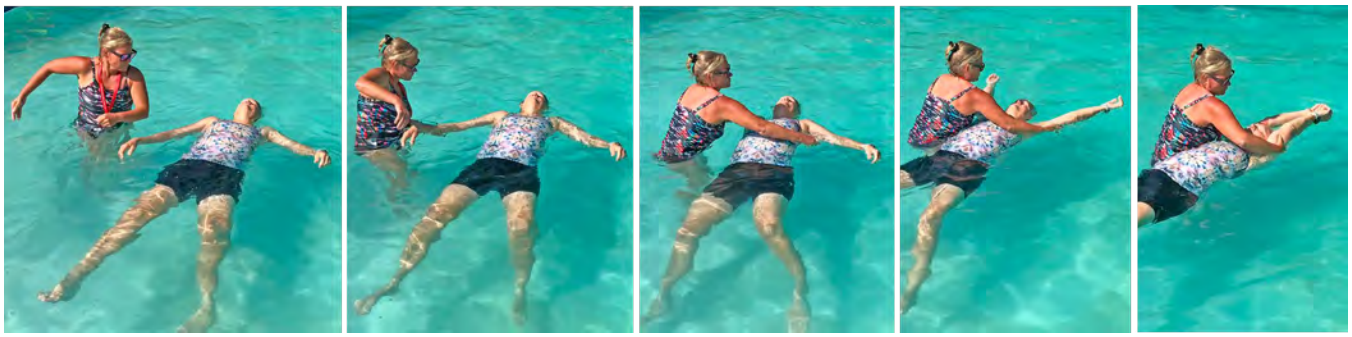
A person suffering a high-impact head injury may not be immediately incapacitated and may move to the side or out of the water. Evaluate anyone observed forcibly striking their head. If they show signs of trauma, complain of head, neck, or back pain, appear confused, or have tingling or loss of sensation in their extremities, have them stand upright, or preferably sit, remain still, and avoid moving. Summon EMS or otherwise arrange for prompt evaluation by a medical professional. If they begin become too impaired to remain sitting, gently lower them to the ground.

If the victim becomes immobile in the water after impact, trained response personnel should provide in-line stabilization as described below and immediately summon EMS. If an in-water evaluation indicates the person is not breathing, then rescue breathing must be started, regardless of the need to move the victim to do so. If the person is breathing, then response personnel should maintain in-line stabilization until EMS arrives with a backboard.

Note: Professional lifeguard training, includes back boarding procedures for suspected spinal injury. Such training is not included in the Scouting America Swimming and Water Rescue course since backboards are often not available at unit swim locations.

At the first indication of a spinal injury victim in the water, instruct everyone else to freeze in place or move carefully to the side. An immediate buddy check may not be appropriate in a crowded area because swimmers quickly converging on their buddies may jostle the victim. After the rescuer has made contact, account for everyone else and have them carefully exit the water.

Face-Up Victim: Overarm Head Splint



If a person with a suspected spinal injury is face up, approach from the side, taking care not to jostle the victim. Provide verbal encouragement and tell the victim what you are doing. Grasp the victim's upper arms between the shoulders and elbow. Grip the victim's right arm with your left hand and their left arm with your right hand.

Slowly and carefully move the victim's arms along side their head. After their arms are in position, gently but firmly squeeze the victim's head between their arms. Continue to apply pressure to hold their head securely with a minium of motion.

Ask the victim about signs and symptoms, such as pain and whether they can wiggle their fingers or toes. If the victim is unresponsive, check for breathing. If the victim is not breathing, immediately provide rescue breathing, either in the water or on land. Rescue breathing, and compressions if needed, take precedent over whatever movement of the victim is needed to provide that care.

If the victim is breathing and has signs of spinal injury or concussion, maintain in-line stabilization until EMS arrives. Other responders can help hold the person in position.

Face-Down Victim: Underarm Head Splint

If the victim is facedown, approach them carefully from the side, but don't delay. Speed matters when the victim's face is in the water. Don't jump into the water next to the victim, but it is often not necessary to enter the water slowly, particularly if the victim is some distance away or the water is already being disturbed by other swimmers.

Stand near the victim's head facing slightly forward. Since the victim's arms may be dangling at their side, the first step is to move them forward alongside their head. Reach across with your near arm and grasp the victim's outside arm (right-to-right or left-to-left) between the elbow and the shoulder with your thumb toward their hand. Grasp their other arm similarly with your free hand. Carefully swing their arms forward along the victim's ears.

Once the arms are in position, squeeze them both at the same time against the victim's head to trap it in place. Next, pull the victim slowly forward at the same time you roll them face up. You turn the victim by pushing down on their near arm and pulling their far arm across. As you roll the victim, your own body should twist slightly to face their feet. Lower yourself in the water as needed to prevent lifting the victim. Ideally, you should be at shoulder depth, but that may be difficult in very shallow water.

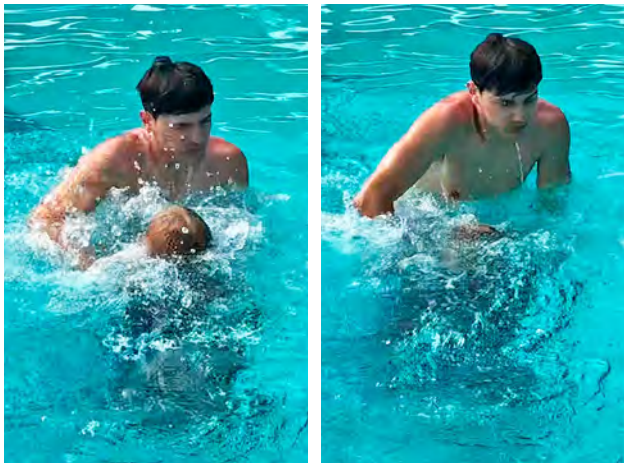
After you roll the victim face up, continue to hold their head in place with pressure on their arms. You can brace one hand against your shoulder to make it easier. Check to see if the victim is breathing; if not, provide care as needed.

If the victim is in deep water, both head splint procedures can be applied while the person is simultaneously moved to shallow water. The rescuer needs strong swimming skills, particularly a rotary kick. A long, narrow flotation aid, such as a rescue tube or noodle may be used to help support the rescuer if held by the rescuer's forearms across the chest. Do not place the aid under the victim's shoulders.

Defenses

Responders using the rescue techniques discussed in this section should be at little risk from the victim. If an active victim reaches for a rescuer rather than an aid, the rescuer should back off. However, if the victim grasps a rescuer, a buddy, or anyone else nearby, good swimmers should be able to escape.

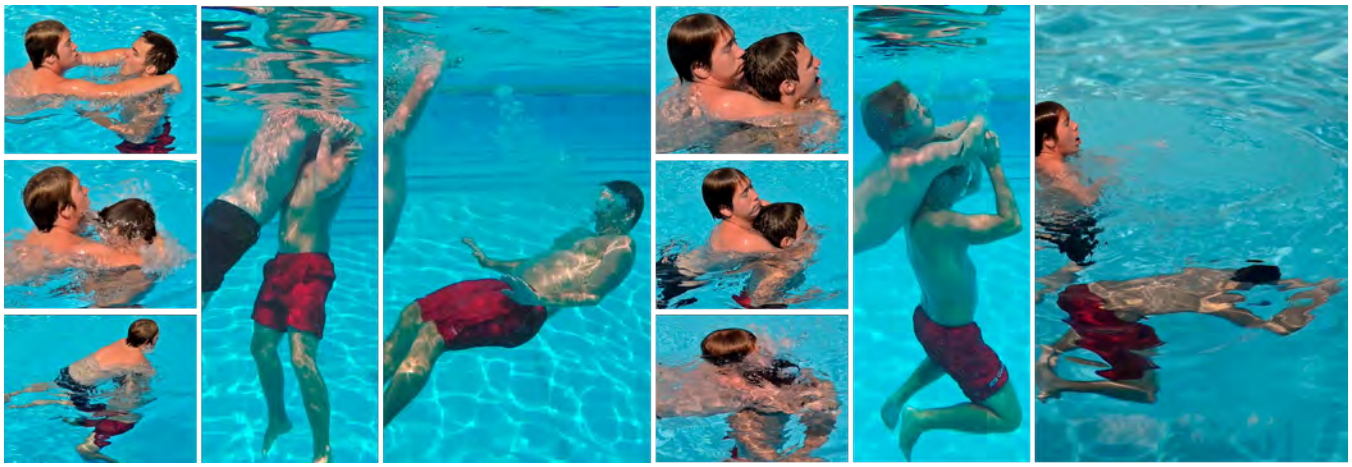
Active, distraught victims seek support to keep their heads out of the water so they can breathe. They may grip the shoulders of anyone close enough and push up with their arms to raise their head high. That will shove the other person down. In that case, the first defense is to go deeper. The victim will likely let go on their own since they are trying to stay up rather than submerge. They certainly will not swim down after someone.



At a unit swim, if anyone grabbed by an active drowning victim cannot quickly get free, they should promptly be assisted by a designated responder, ideally with a flotation aid.

Front and Rear Head-Hold Escapes

If a victim grabs you around the neck or shoulders either from the front or the rear, take a quick breath (*suck*), tuck your chin so that it doesn't catch on the victim's arm (*tuck*), and submerge both yourself and the victim (*duck*). You can submerge using the arm motion of a feetfirst surface dive or simply stop kicking to stay up. If the victim does not let go, grasp their upper arms near the elbows to shove the victim upward and yourself downward. Swim clear of the victim before surfacing.



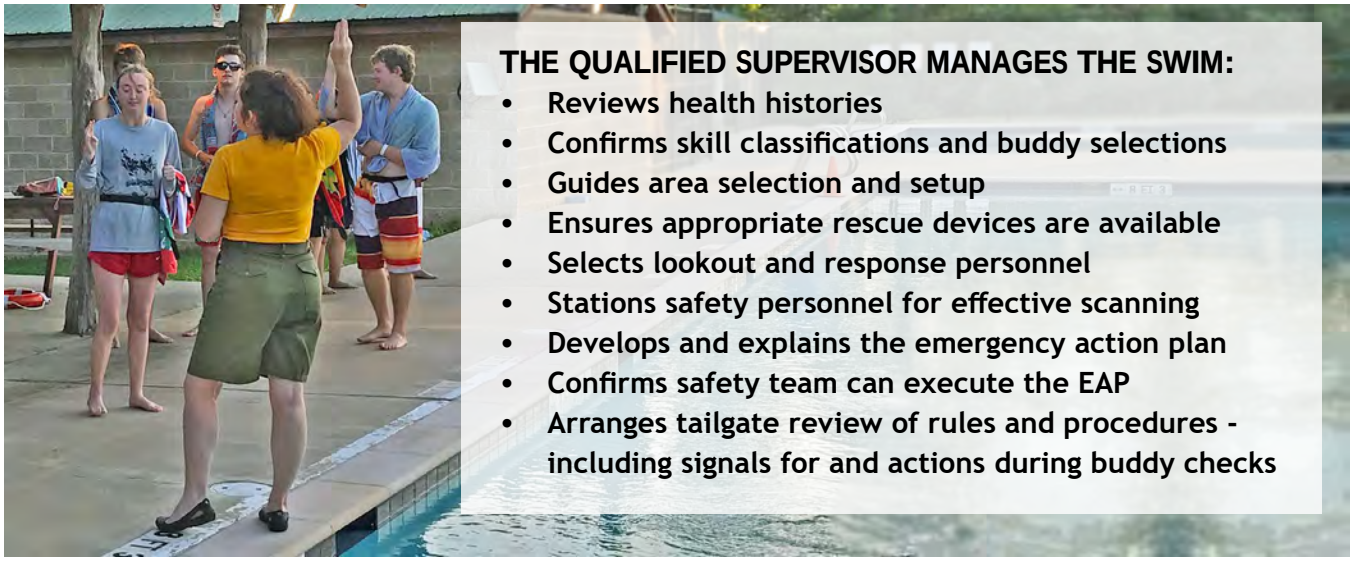
Chapter 11

Safety Team Preparation

The century old goal of every Scout a swimmer, every swimmer a lifesaver is still applicable. However, simply having trained rescuers at hand does not constitute adequate preparation to prevent and safely respond to drowning emergencies at a unit swim. The unit leader, the qualified supervisor, the lookout, and emergency response personnel are all important components of a safety team. Each needs to understand their function and how it relates to the others, particularly since a single individual may serve in more than one role. Safe Swim Defense defines those functions, but this section expands on the duties and interactions of team members, particularly for incident prevention and response. Team members need to be provided with the necessary equipment, coached in an emergency action plan, and deployed to cover the area effectively.

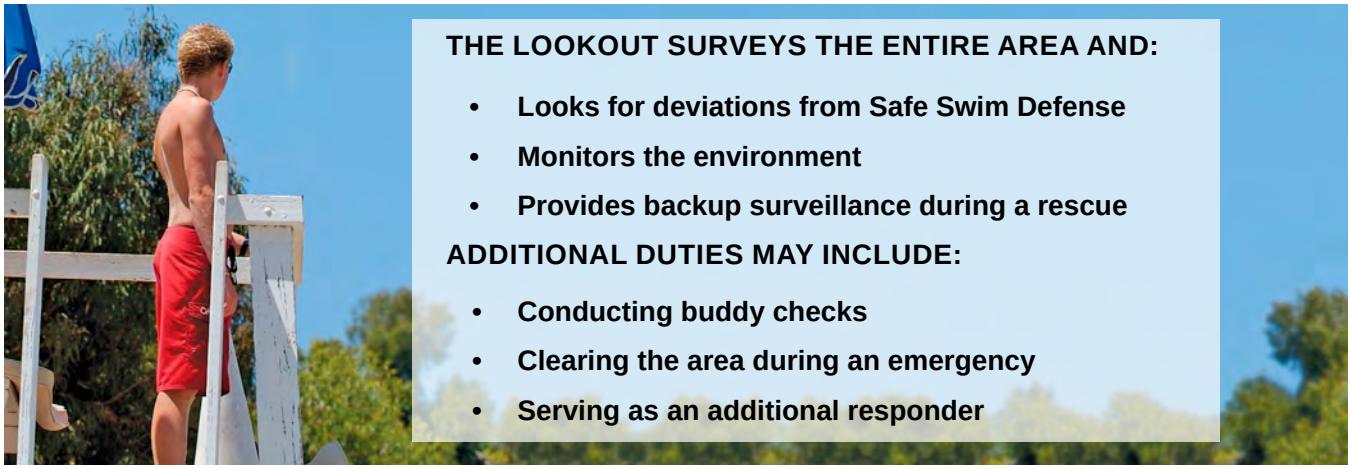
Roles and Responsibilities

- **The unit leader** makes sure there is a trained adult present to serve as the qualified supervisor for the swim. If the unit leader does not fill that position, then the leader provides unit resources and support to that person. If unit leaders serve as the qualified supervisor, then they should recruit at least one other adult as an assistant to help with discipline, particularly during an emergency, and to satisfy Youth Protection policies.
- **The qualified supervisor** reviews health information and ability group classifications, guides the setup of the areas, makes lookout and emergency response assignments, deploys those people to provide effective surveillance, ensures that appropriate rescue aids and communication devices are available, develops and explains the emergency action plan for the event, coordinates execution of the plan during a crisis, and assigns someone to check participants in and out of the area if needed.
- **The lookout** maintains a constant watch to ensure that all elements of Safe Swim Defense are working. The lookout normally calls buddy checks and clears the pool if needed during emergencies. Although not required to assist in water rescues, the lookout may do so if qualified, but only after the safety of everyone else in the group is established. If the qualified supervisor serves as the lookout, that person must assume no other duties, such as providing skill instruction.
- **Response personnel** are designated by the qualified supervisor to closely monitor the activity and respond during emergencies. The emergency action plan should clarify the roles of each individual responder—for example, who reacts to an emergency in one part of the swimming area, and what the others do to maintain the safety of everyone else during such a situation. The responder's monitoring role is just as important as emergency response. Each person needs to continuously scan their assigned area. The ratio of responders to swimmers is 1 to 10; however, different unit members may rotate in the role during the course of the activity. The qualified supervisor may also serve simultaneously as a responder.
- **Buddies** Everyone at a unit swim has a safety role and should be aware of emergency signals and what do to if those are activated. Also, everyone in the water should be watched by at least three individuals: the lookout, a responder, and a buddy. Buddies may be the first to notice a problem and should immediately alert members of the safety team.
- **Emergency Medical Services** While not on site or typically involved in unit planning, EMS personnel are important adjuncts to the unit safety team. Access to, and expected response time, should be included in emergency planning.
- **Venue Lifeguards** If unit leaders are not confident in their ability to conduct a safe unit swim using unit personnel, they are encouraged to arrange unit swims where professionally trained lifeguards are on duty. The venue lifeguards fill the role of unit response personnel and will react according to the venue's emergency action plan. The qualifiedly supervisor is still responsible for implementing other aspects of Safe Swim Defense.



THE QUALIFIED SUPERVISOR MANAGES THE SWIM:

- **Reviews health histories**
- **Confirms skill classifications and buddy selections**
- **Guides area selection and setup**
- **Ensures appropriate rescue devices are available**
- **Selects lookout and response personnel**
- **Stations safety personnel for effective scanning**
- **Develops and explains the emergency action plan**
- **Confirms safety team can execute the EAP**
- **Arranges tailgate review of rules and procedures - including signals for and actions during buddy checks**

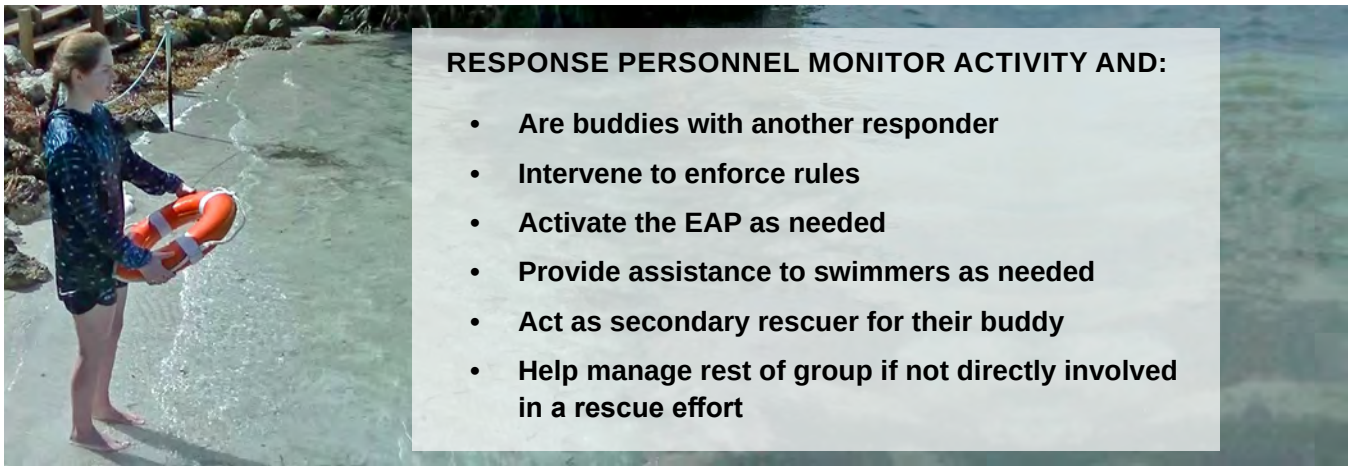


THE LOOKOUT SURVEYS THE ENTIRE AREA AND:

- **Looks for deviations from Safe Swim Defense**
- **Monitors the environment**
- **Provides backup surveillance during a rescue**

ADDITIONAL DUTIES MAY INCLUDE:

- **Conducting buddy checks**
- **Clearing the area during an emergency**
- **Serving as an additional responder**



RESPONSE PERSONNEL MONITOR ACTIVITY AND:

- **Are buddies with another responder**
- **Intervene to enforce rules**
- **Activate the EAP as needed**
- **Provide assistance to swimmers as needed**
- **Act as secondary rescuer for their buddy**
- **Help manage rest of group if not directly involved in a rescue effort**

Surveillance

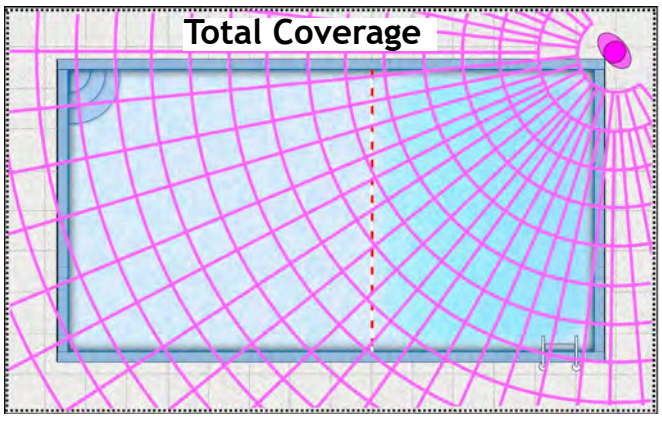
According to Safe Swim Defense: ***Every swimming activity must be*** **closely and continuously monitored** ***by a trained rescue team*** **on the alert** ***for and ready to respond during emergencies*****.**

The first part of that directive involves effective surveillance, that is, keeping a close watch on everyone. What to look for was covered in Chapter 9. How to look is covered in this section. Unit leadership is responsible for providing guidance to the safety team to minimize the risk of an unobserved submersion. That includes assigning safety team members areas to watch and determining where they should watch from. (Note: this section assumes professionally trained lifeguards are not provided by a regulated facility or tour operator.)

Personnel Placement and Numbers

Appropriate locations for effective surveillance depend on the area layout, the number of swimmers in each ability group, and the number of safety team members. Goals include clear views, maximizing observation of each individual in the activity, and minimizing response time.

For small areas and groups, a responder may be able to watch everyone over the entire area. That option is known as **total coverage**. The responder must also be able to quickly reach anyone needing help anywhere in the area, ideally within 30 seconds or so. If it takes significantly longer than that to spot and reach a victim, then either the size of the area needs to be reduced or additional responders added to be closer to all participants.



Safe Swim Defense requires one responder per ten participants. However, even if only six swimmers are present, the layout to the right does not satisfy Safe Swim Defense surveillance criteria - it lacks a lookout.

The lookout always provides total coverage. The lookout should be close at hand with a clear view, but need not be able to immediately enter the water. That is, the lookout may be on an elevated platform for better viewing.

The layout to the right, with one responder and a lookout, is appropriate for a crew of six youth and two adults using a hotel pool on the way to either the Northern Tier or Sea Base high adventure bases.

The layout is also appropriate for two responders watching from 11 to 20 swimmers. In that case, a separate lookout is still needed.

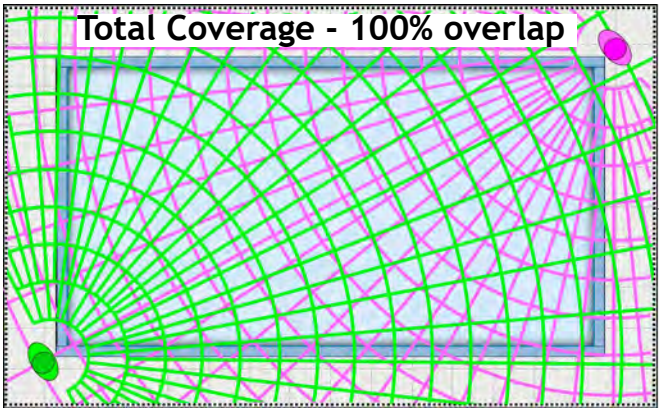
For larger areas or more swimmers, a responder may be assigned to watch only part of the area or specific ability groups (**zone coverage**). Other responders are assigned zones that combine to cover the entire area.

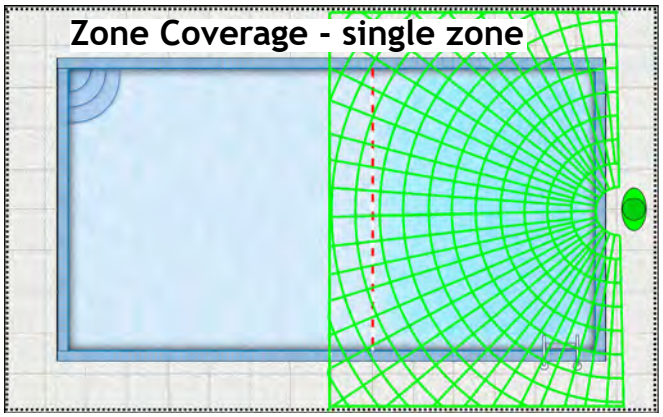
Zone boundaries should be well defined by physical markers, such as floating lines, ladders or pier segments. Vague instructions, such as "halfway across" or arcs drawn on a diagram may lead to confusion. Zones should also overlap.

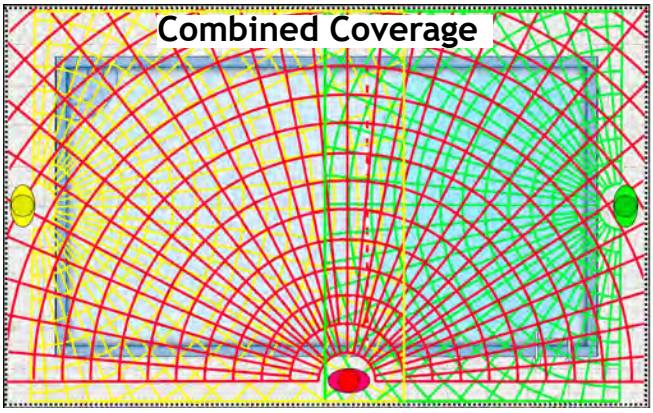
Zones should be adjusted to balance the number of swimmers in each. That is, zones with fewer swimmers may cover more area. That is to optimize the time responders have to scan each person in their zone.

Although responders may be assigned zones, the lookout stills provides total coverage. Both together results in **combined coverage**.

Total overlapping coverage by multiple safety team members adds an extra layer of protection since everyone in the water is monitored by at least three observers: a responder, a lookout, and a buddy.







Dual coverage also provides automatic backup surveillance during an emergency as well as allowing a safety team member to momentarily interrupt scanning to deal with minor issues. For example, a responder may need to direct a swimmer with a nosebleed, along with the swimmer's buddy, to the adult supervisor without activating the EAP. Or, a lookout may need to call a swimmer to the side to caution against sunburn.

Dual coverage likewise supports the buddy system which applies to safety team members as well as swimmers. Every safety team member is within the scan of at least one other. During an emergency, a responder's buddy provides rescue assistance as needed while other safety team members manage the rest of the group.

The basic concepts of total, zone, and combined coverage apply to all locations, but the best positions to station safety team members will depend on the area layout as well as factors such as the sun direction. Review Chapter 7: Swimming Locations for items to consider. Response personnel may shift positions as needed to adjust to changing conditions.

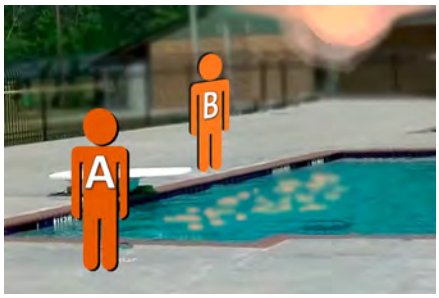
Scanning

Response personnel should perform a systematic scan so that each swimmer in their zone comes under close observation at frequent intervals. A complete scan every ten seconds is a reasonable expectation. If that is not achievable due to a crowded area, then more observers should be deployed. Safe Swim Defense requires a ratio of one responder to ten participants. That should limit the number of participants assigned to each responder. The 1:10 ratio is met if one responder's zone has eight participants while another has twelve. However, it is not appropriate to assign one responder to watch two people while another watches eighteen.

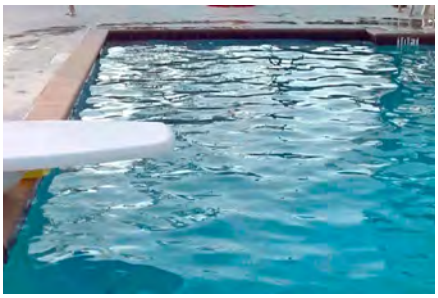
Observers should be able to see all of their assigned area with little head movement. Visual sweeps may be from side-to-side, in-and-out, or varied, and should include both the surface and, in clear water, the bottom. The area immediately below the station should not be neglected.

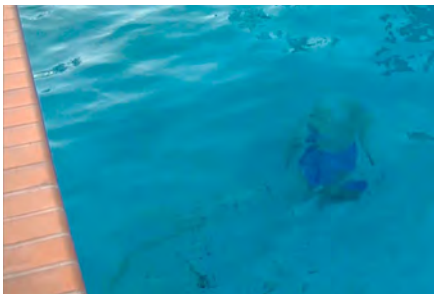
It is more important to focus on the swimmers than on a particular scanning pattern. Effective scanning requires deliberate attention to swimmer behavior. For small groups at unit swims, head counting is very effective. Update the count as swimmers enter or leave the zone. Between counts, scan the entire zone and track individuals (someone swimming underwater, for example); note group interactions, such as those playing a game; and look for signs that someone is in trouble or is breaking the rules. If a swimmer appears to be alone, the observer should scan for the buddy. If it is apparent that the buddies are not watching each other, the observer should either catch their attention or call for a buddy check to remind buddies to stay together.

Observers should not be facing into the sun or glare. It is important to check that observers can actually see what they should and to re-position them if they cannot. Water motion can also obscure underwater objects.



Layout for glare example


View from A


View from B

Sunglasses with polarized lenses and UV protection aid visibility and protect the eyes. Caps with visors and sunshades are also useful.

Each responder should be assigned a buddy who provides backup for the rescue. (For example, the backup may be a line tender for a line rescue.) In turbid water conditions, the responder's buddy should act as a spotter in case the victim submerges before being reached.


Glare reduction with polarized glasses

Other response teams should automatically increase their surveillance zones to help the lookout cover the area normally scanned by the team performing the rescue.

A safety team member assigned surveillance duty is expected to intervene promptly to prevent accidents as well as to recognize and respond to emergencies. Those are the only tasks that should be undertaken. Observers should focus on the task at hand and not engage in casual conversation. If it is necessary to speak with a swimmer, the observer should do so quickly and continue to scan the area if possible. Effective scanning involves hearing as well as vision. Observers should not listen to music using earphones while on duty.

Unit members acting as observers at a unit swim should be changed frequently to allow as many as are qualified to serve, and to allow everyone the opportunity to have fun. The best time to change safety personnel is during a buddy check. A typical swimming activity should last only an hour or so. Adult observers with critical skills may serve for the entire time.

The lookout should be in a position to observe the entire swimming area as well as the deck or shore. The lookout makes sure everything is as it should be, for example: responders are in position and alert; distant clouds are not threatening; no one is entering or leaving without checking in or out. The lookout typically signals buddy checks and confirms the count. In an emergency, the lookout decides whether to sound an emergency signal and provides backup surveillance of the zone where the rescue is taking place. When one team responds, the lookout and other responders are responsible for emergency communication and the supervision of the rest of the swimmers.

Communication

A rescue at a unit swim site may involve nothing more than a simple reaching assist to a person with a momentary cramp. However, any rescue, from simple to complex, should be considered a team effort. Such coordination requires communication. It is not necessary to equip all supervisory personnel with whistles and an elaborate code, but it is necessary to establish a few fundamental signals. Communication should be outlined in an emergency action plan and include how the safety team shares information among themselves, participants, emergency services, those being rescued, and parents.

A single short blast of a whistle is often used at public facilities as a warning given to a particular individual to stop some action. If the whistle is overused for that purpose, swimmers can become accustomed to the sound and tend to ignore it. Although such a signal is sometimes useful, it should be used sparingly, if at all, at a unit swim. Direct verbal communication is recommended to correct inappropriate activity by a specific individual. A buddy check can be called to quell group infractions.

The signal for a buddy check should be simple and easily recognized, such as a single long blast of a whistle or an air horn. The signal for a buddy check does not normally indicate an emergency but can be used to clear the swimming area rapidly, particularly if unit members are required to sit on the side of a small pool as opposed to standing stationary in a lake. A buddy check is an appropriate part of an emergency action plan if a swimmer indicates that they can't find their buddy. A buddy check can also be called to close down the activity for weather, or simply when the allotted time has passed. A separate "checkout" signal is not needed, and may actually slow down the final buddy check. The same signal used to call the buddy check can be sounded to resume swimming, or replaced with a simple verbal directive to "resume swimming." Since all swimmers should remain silent during the buddy check, voice communication is appropriate.

SUGGESTED SIGNALS

BUDDY CHECK: One long blast means everyone moves to their buddy and remains silent.

EMERGENCY: Repeated short blasts means everyone freezes silently in place and waits for instruction.

A specified emergency signal is needed to gain the attention of the entire group without the corresponding scrabble for buddies. The call should alert everyone to stop what they are doing, freeze in place, and listen for instructions. The signal can be used to clear the way for a line-and-tender rescue or to prevent swimmers from colliding with someone in distress. It is also useful to minimize the possibility that another crisis will arise while the first situation is being resolved. Repeated short blasts of a whistle, or any other simple sequence distinct from the buddy check call, may be used. Both the "emergency" and "buddy check" signals should be sounded and explained to the group at the final procedural review before swimming begins.

During a crisis, response personnel react immediately to perform the necessary assist. The qualified supervisor or lookout, as previously specified in an emergency action plan, decides whether it is appropriate to sound the call for a buddy check or an emergency. Normally, the area and numbers involved in a unit swim are small enough that responders, lookout, and unit leaders can communicate verbally without the need for special signals among themselves. That verbal communication can include a "call 9-1-1" directive to the person previously assigned to make the call.

Before the activity, means for contacting emergency medical services must be established. At urban locations, a phone call placed to 9-1-1 is common, and may summon a reasonably prompt response at some rural settings. If a mobile phone is used, make sure there is cell coverage, the phone is charged, and the person placing the call knows how to direct rescuers to the site. In remote areas, it may be necessary to dial some other number (e.g., a ranger station) or to first travel some distance to where a signal is available. Communication with emergency services is an important part of the emergency action plan.

9-1-1
Know local emergency numbers and arrange access to them.

Emergency Action Plans

Devising an emergency action plan may be simple or complex, but it should be a deliberate undertaking for all swimming activities. Swimming might be a side activity during an excursion such as a backpacking trek or a float trip. In that case, some components, such as arrangements for medical services and evacuation, will be part of the emergency action plan for the main activity. At a minimum, the following items should be considered. Note that many of these items should already be addressed by a facility emergency action plan if the unit is swimming where trained lifeguards are employed.

- **Incident director.** Safety team members should respond automatically to emergency situations without first seeking approval. However, there needs to be a single individual designated to step in and take charge if unexpected situations arise. That person is the qualified supervisor defined by Safe Swim Defense. If a unit leader aged 21 or older is assisted by someone of lesser age who has more extensive training , then that person may assume this role. There should also be a second person designated to take charge if the emergency involves the primary individual. Recall that adult cardiac arrest is the most likely life-threatening emergency to arise during unit outings.
- **Safety team members (who and how many).** For a small crew of two adults and six youth, the two adults, if properly trained, may serve as the lookout and responders. For larger groups, there must be a lookout and sufficient responders to maintain a ratio of one responder for every 10 swimmers or fraction thereof. For example, a group of 35 swimmers requires one lookout and four responders.
- **Safety team deployment.** The lookout must be able to observe the entire activity. If the group is too large for that to be practical, then the group may be subdivided into separate swimming areas, each with its own complete safety team. Alternatively, the swimming activity may be offered at different times to subsets of the unit, such as patrols. Responders are best deployed as buddy pairs watching the same areas. If a line-and-tender procedure is used, then the buddy pair will be stationed at the same location. If other assists are appropriate, the pair may be separated for better surveillance and response time. The qualified supervisor is responsible for positioning responders to provide adequate coverage of all areas with due consideration of the training and maturity of the individual responders. The supervisor is also responsible for providing each responder with rescue devices suitable to the responder's level of training.
- **Safety team duties.** As a whole, the safety team has five primary duties: careful tracking of the number of people in the activity, continuous surveillance of assigned areas, intervening to stop rule infractions, intervening to provide emergency assistance, and providing backup surveillance and supervision of swimmers not involved in a rescue situation. Backup surveillance is automatically provided by designating a lookout separate from the responders. The supervisor is responsible for handling disciplinary problems.
- **Likely emergencies.** The supervisor should prepare the safety team to respond appropriately to active victims, unconscious victims (at or below the surface), and potential spinal injuries. The supervisor may elect to have specific safety team members respond to special situations—a spinal injury, for example—but in general each responder should be coached in how to provide assistance in likely scenarios.
- **Signals.** The emergency action plan should include audible signals for buddy checks and emergencies and assign a specific individual, such as the lookout, to decide when such signals are needed.
- **EMS.** Emergency medical services should be summoned promptly for any incident that involves a serious medical condition or victim submersion. The person making the call should be able to clearer communicate the situation and provide necessary directions. Phone services may provide dispatchers with a general address, but EMS will need to know where on site the emergency actually is. Either the caller or another desig-

nated member of the unit may need to meet an ambulance at an obvious entry point. The Annual Health and Medical Records for persons needing help should be available to facilitate treatment. Someone should also be assigned to contact parents as soon as possible. Those details should be covered in the emergency action plan.

- **Weather.** All swimming activities should be curtailed whenever thunder and lightning threaten. A sudden cold snap, high wind, or visibility impaired by fog, mist, or rain may also interrupt the activity and require back-up planning to move unit members to a safe, comfortable location.
- **Tailgate review.** Finally, the supervisor should determine what aspects of the emergency action plan to review with participants just before the event.

Incident Reporting

Scouting America policy requires prompt reporting of any incident requiring treatment beyond Scout-rendered first aid, such as intervention by EMS or a visit to a licensed health care provider. After the injured is taken care of and other participants are in a safe place, unit leaders should preserve and document evidence, including photos if appropriate, complete an incident report, and notify the local council. Forms and procedures are available on the Scouting Safely tab of the website at https://www.scouting.org/health-and-safety/incident-report/. Questions about insurance coverage should also be directed to the local council.

Safe Swim Defense Kits

Various items are needed to set up and aid the safety team in protecting a unit swim. Depending on the location, some necessary equipment may already be on-site. For example, many hotel pools have a ring buoy, shepherd's crook, and house phone within the area. In other situations, the unit will need to carry support material with them. Some units maintain a simple "swim kit" in a bag that travels with the unit. Other units assemble a kit just before an outing with the items they know will be needed. Items may include:

- **Medical histories.** The qualified supervisor should review Annual Health and Medical Records for each participant before the outing to determine any special precautions that may be necessary. Copies of the forms should also be carried on any remote trip and shared as appropriate with emergency medical personnel. Information on allergies and preexisting conditions may influence treatment options. Also, the forms allow parents to authorize emergency treatment if they cannot be reached. The qualified supervisor should also determine if participants have had any recent illness or injury not noted on the forms.
- **Cell phone.** Portable phones are useful for emergency communications and notifying parents of changes in plans. Be sure to check coverage and battery charge.
- **Whistle.** Handy for signaling buddy checks or emergencies.
- **Rescue line.** Line in 50- to 75- foot lengths can be used for throwing or line-and-tender rescues. Floating line, often polypropylene, is better than line that doesn't, such as nylon. Braided line is better than twisted. Braided line with a core is better than loosely woven line without a core. A throw bag is an easy way to transport and use the line.
- **Rescue flotation devices.** Rescue tubes, foam swimming noddles, ring buoys, throwable boat cushions, and various life jackets are useful rescue aids. Review Chapter 9 for details.
- **Buddy tags and portable boards.** A simple list of names on a piece of paper is adequate for tracking those in the water and their ability classification. Some units save their buddy tags from summer camp and use them with small, portable buddy boards. Other options include tongue depressors stuck in the sand, or wooden clothespins strung on a line. Waterproof markers are used to print names and color tags by ability groups.

Additional items are needed to set up a temporary area in a natural body of water when swim areas are not provided at recreational facilities. Review Chapter 8 for details.

- **Boundary lines.** Light cord connected to floats can be used to define nonswimmer and beginner areas. Slightly thicker floating line is even better.
- **Balloons.** Balloons inflated on-site are easy to transport and make highly visible floats to define swim areas.
- **Anchors.** Rocks are often difficult to tie to; for anchors, nylon or plastic sacks carried in the kit may be stuffed with rocks or sand. Large fishing sinkers may also be used.





Buddy Tags: Special tags are often placed on hooks on a buddy board at Scout summer camps to track Scouts from multiple units entering and leaving the swimming area. Similar systems are appropriate for unit swims and help reinforce the buddy system. However, Safe Swim Defense does not require the use of buddy tags, even for council camps. The requirement is that the safety team have a precise method to identify everyone in the swimming area at all times, along with their ability group and buddy. At unit swims with small numbers of participants who know each other and enter and leave together, a simple list will suffice.

Tailgate Review

Area setup and emergency plans set the stage for a safe swim. A review of rules and procedures just before the swim clears the stage for the activity. Youth leaders should be encouraged to provide the review after coaching by the qualified supervisor. A tailgate review should be short and simple, but include the following:

- **Entering and leaving the area**
- **Ability areas**
- **Any hazards to avoid**
- **Buddy assignments**
- **Buddy check purpose, signal, and action**
- **Emergency signal and response**

At a public facility with professional lifeguards, review the following:

- **Buddy assignments**
- **Appropriate water depths and areas for different abilities**
- **Location of unit leaders**
- **Time and place to meet**

Unit Swim Planning Guide

This worksheet is an aid to unit leaders consistent with Scouting America's Commitment to Safety. It supports planning, but qualified and trustworthy adults must still exercise due diligence when delivering the program. Items should be completed by unit leaders who are currently trained in Safe Swim Defense.

- **Who**

[ ] List names and training of adults supervising the swim. Training to include Safe Swim Defense, Swimming and Water Rescue, and lifeguard.
[ ] Identify who in the above list will serve as the Qualified Supervisor
[ ] List everyone participating in the swim, including adults
[ ] Review recent health histories of all participants and note any special precautions for swimming activities
[ ] Review swimming ability of all participants and note numbers of nonswimmers, beginners, and swimmers.

- **Where**

[ ] Specify location and type of venue:
[ ] pool with professionally trained lifeguards on duty
[ ] pool where unit provides response personnel
[ ] designated swim area in natural waters with lifeguards
[ ] designated swim area where unit provides response personnel
[ ] natural waters where unit must establish a safe swim area

[ ] Identify any special risks at the swimming venue, such as excessive water depth, murky water, current, surf, cold water and/or play structures, and factor those into activity planning.
[ ] Determine if life jackets should be worn as an additional layer of protection.

- **For established swim areas with professionally trained lifeguards provided by the venue:**

[ ] Establish means to track participants – no one should enter or leave without notice.
[ ] Determine zones within the venue where water depths are consistent with swimming classifications and inform participants.
[ ] Make sure everyone has a buddy and understands their commitment to the other.

- **For established swim areas where the unit provides response personnel, training in Swimming and Water Rescue is recommended. Preparation includes the previous items along with:**

[ ] Review Chapter 9: Water Rescue and Chapter 10: Safety Team Preparation in Aquatics Supervision.
[ ] List adults and responsible youth available to serve as response personnel.
[ ] Ensure rescue aids are available to response personnel.
[ ] Review use of available rescue aids with response personnel.
[ ] Determine where response personnel should be stationed for effective surveillance.
[ ] Appoint and deploy a lookout
[ ] Work with the lookout and response personnel to formulate an emergency action plan that covers drowning and other medical emergencies, including how to remove a passive victim from the water, who is trained to provide CPR, and who calls Emergency Medical Services.
[ ] Plan for regular buddy checks during the activity

• For locations in natural bodies of water where the unit must first establish a safe swimming area, training in Swimming and Water Rescue is strongly recommended. Preparation includes the previous items along with:

[ ] Review Chapter 7: Swimming Locations in Aquatics Supervision
[ ] View the Remote Area Setup video
[ ] Determine in advance if all three classification areas are needed
[ ] Gather equipment needed to define areas
[ ] Assign qualified swimmers to check the bottom for hazards and depth, and deploy markers
[ ] Assign response personnel to monitor those checking the area

Aquatics Supervision

Remote Area Setup

Chapter 12

The Underwater World

Water covers most of the earth's surface. An extraordinary world of fantastic plants and animals awaits those who venture beneath the surface, whether the trip is at a nearby lake, along a tropical reef, or beneath the ice in the Arctic. The undersea world is too diverse to discuss in detail here, and seeing it in person is better than reading about it. Scouting America has two special awards, **Snorkeling** and **Scuba,** that provide introductory skills for Scout-aged youth and their leaders to contemplate an undersea journey. The Scuba Diving merit badge, and the Open Water Diver Certification it includes, prepares Scouts to experience recreational submarine excursions in accordance with Scouting's scuba policy. The National High Adventure Sea Base provides the training and environment to make dreams of underwater adventures a reality for older youth.

Compared with surface land, much of the submarine world remains a wilderness. But those areas most accessible by people have suffered environmental damage similar to the open-air back country. Scouts know that caring for the environment is a key aspect of enjoying the outdoors, whether above or below the sea. Leave No Trace concepts apply to both worlds. Coral might look like a rock but is actually composed of living organisms. The general rule when snorkeling and diving is **"Look but don't touch."** Not only does that protect the environment, it also protects the diver. Some sea creatures have defenses best not provoked. The skills discussed below are to be learned in clear, confined water. Before venturing into open water, learn more about the undersea ecosystem, both to protect it and to protect yourself.

Mask Selection and Fit

The mask should have a single or double tempered-glass faceplate held to the skirt with a rigid band. The skirt, often of clear silicone, should have a double seal where it fits against the face. There should be a pocket so that the nose can be gripped with one hand for equalizing pressure in the ears. The strap should be easily adjustable and either split or wide where it fits across the back of the head.

To fit a mask, place it against your face without using the strap, then inhale gently through your nose. A mask properly sized and shaped for your face will remain in place. If the mask doesn't seal easily, try another style. Don't force the mask to remain in place by pushing down on the skirt and inhaling strongly. If the mask leaks underwater, or requires excessive strap pressure, the fit is poor.

To fit the strap, inhale to hold the mask in place, then pull the strap over the back of your head. If the strap is too tight, stop and loosen each side a notch or two. If the strap is too loose, tighten each side. Strap adjustments vary in style. Some have a hinged clip; on others, ridges are moved past a movable pin and held in place by friction and a slide. Figure out how to lock and unlock the device rather than forcing it. The strap should be only tight enough to hold the mask comfortably to your face. If the mask leaks, try a different style rather than pulling the strap too tight.

You can also don the mask back to front. Lift the mask over your head to position the strap on the back of your head, then pull the mask gently into place. The mask strap rides above the ears.

Warm air from your nose contains water vapor that will condense on the cool faceplate and block your vision. A few drops of a commercial anti-mist solution spread on the faceplate will prevent fogging. In a pinch, a bit of saliva will work, but not as well. New masks may have a residue on the faceplate that will contribute to fogging. Carefully wash a new mask to remove any such coatings.

The Snorkel

A snorkel is simply a short breathing tube from your mouth to the back of your head that allows you to breathe while looking down with your face in the water. The simplest designs are shaped like a J with a mouthpiece on the bent end. Other designs have contoured bends to better fit around the head. Still others have a flexible section near the mouthpiece. Although flexible sections may be corrugated on the outside, they should be smooth on the inside so that water is not caught in the ridges. Some snorkels have one-way purge values near the mouthpiece. Others have "dry top" vents designed to keep out surface splashes. Regardless of design, the tube should have a diameter of about an inch (about the size of your thumb) and not be over 14 inches or so in length. A snorkel only works over short lengths. Never try to breathe through a hose to greater depths. The physics of the situation makes air exchange with the surface impossible, and the chemistry of re-breathing your own air causes problems. A few snorkel designs have flapper values at the top to keep water out during submersion. Conventional purging techniques should be learned before using such systems.

Attach the snorkel to the mask strap using a "keeper," which comes in various designs. Tucking the snorkel under the strap is not reliable and distorts the fit of the mask. The snorkel may be attached to either side. Scuba divers attach the snorkel on the left to avoid the regulator hose that comes over the right shoulder.

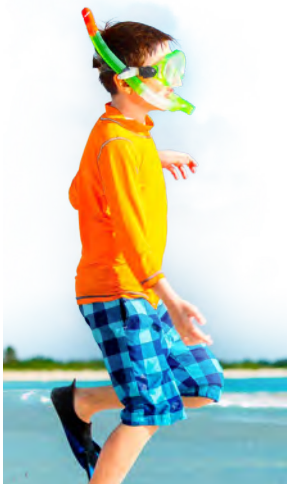
Full-Face Snorkel Masks Prohibited

The Guide to Safe Scouting states **full-face snorkel masks (combinations of a built-in snorkel with a mask that covers the mouth and nose) are prohibited** for Scouting America activities. Limited studies concerned with breathing pressure, re-breathing of CO_2, and difficulty of removal in urgent situations, have found that some products may not pose hazards, but suggest potential problems with other devices.

Fins

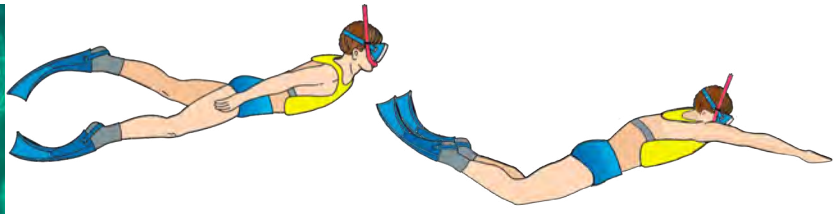
Fins are flexible, wedge-shaped flippers worn on the feet to improve the power of your kick. Blades come in a variety of designs, some long and narrow, some split, some with louvers, all claiming various improvements in efficiency. In general, the larger and more rigid the blade, the more power in the kick, but that also means tiring more quickly. The most important considerations are a comfortable fit and ease of use.

There are two basic types of fins: closed-heel and open-heel. Closed-heel fins fit over the entire foot and are often used for snorkeling in warm water. If one size is too tight, and the next larger size is too loose, then a pair of socks worn with the larger size may be useful. Some full-foot fins float, which can be handy if a fin is accidentally dropped in deep water. (Not so good for scuba diving.)



Open-heel fins are designed to be worn with dive boots and are held in place by an adjustable strap. They are a good choice if a wet suit is needed in cool temperatures, but are also useful in warm water where booties provide foot protection on rocky beaches.

Fins should be put on wet, and ideally only when ready to use. Occasionally, walking in fins may be necessary—when wading through surf into deep water, for example. If so, walk backward, slowly and carefully.



A slow, wide flutter kick is generally used both at the surface and under the water. A dolphin kick is a fun option under the water. The arms may be used for surface dives but are not often needed for cruising. They may be held at the side or in front. It is a recommended practice to hold at least one arm overhead when surfacing.

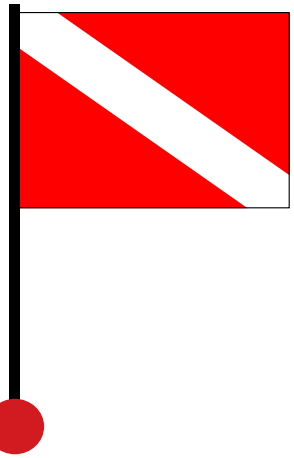
Vest

An inflatable vest is a useful tool that adds to the enjoyment and the safety of open-water snorkeling. A few puffs of air in the oral inflation tube provide buoyancy while swimming out to a site or viewing it from the surface. The air is released through the same tube before a surface dive. Frequent use provides comfort and prevents exhaustion. A vest is not simply a backup device reserved for emergency use only, although it does provide an extra safeguard during a crisis.

Use of individual flotation devices (inflatable snorkeling vests or life jackets) is required for Scouting America snorkeling activities whenever there is notable current or swells, when the bottom is not visible from the surface due to vegetation or limited visibility beyond eight feet, or when the activity is greater than 50 yards from shore or craft.

Dive Flag

A dive flag should be used at open-water sites open to other activities and may be required by local regulations. Swimmers are hard to see in the water. A dive flag alerts boat operators to avoid the area. It may be displayed from a dive boat or attached to a float and towed with the snorkeling party. Local codes often require boats to stay a minimum distance from the flag (typically 100 feet) and may also mandate the size of the flag and how close snorkelers must stay to it (typically 50 feet).



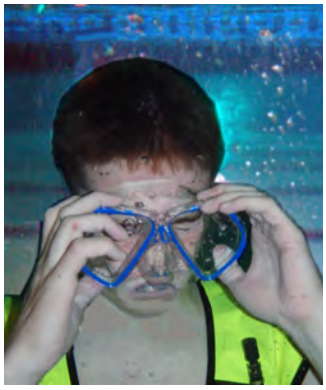
Accessories

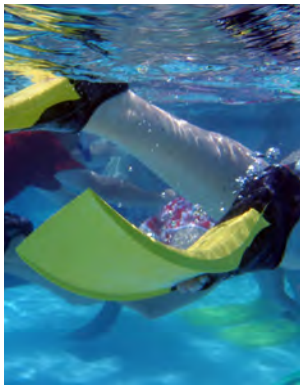
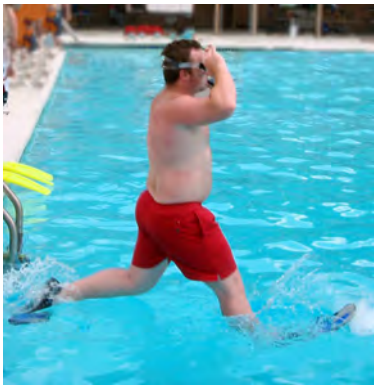
Useful accessories include a whistle attached to the vest as a signaling device, gloves to protect the hands, and protective clothing, either light everyday wear or special dive "skins," to limit sun exposure on the back and legs. A mesh gear bag is handy for transporting gear to and from the site and allows the gear to dry after cleaning. In cooler waters, a wet suit provides comfort. However, a wet suit also provides buoyancy that may make surface dives more difficult. Experienced skin divers may wear weight belts with wet suits to achieve neutral buoyancy. Weights are not recommended for anyone who has not been trained in their use by a qualified instructor.

Snorkeling Skills Training Outline

The following sequence of exercises covers skills required for the Scouting America Snorkeling award, but is not a complete lesson plan. Counselors for the Snorkeling award need to review the requirements and decide how to best cover the skills and the cognitive material. Some items such as dive signals, the effect of water on sight and sound, and the need to equalize pressure are listed as distinct requirements but may be introduced and discussed as needed. Also note that some of the requirements cover items discussed elsewhere in this text; e.g., hyperventilation and hypothermia. Portions of this guide, particularly Chapter 12, may be reproduced and distributed in print or digitally as a brochure for those working on the award.

1. One buddy dons a mask and sits on the bottom in shallow water to check for leaks. If needed, the other buddy may assist by standing behind the first and applying slight pressure on the shoulders to prevent floating. If the fit is acceptable, the pupil looks toward the underwater instructor, gives the underwater OK sign, and then surfaces when the instructor gives the UP sign (or before if needed). If the mask leaks significantly, the person just stands up.

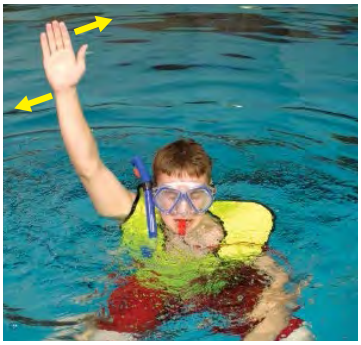


2. The same buddy again sits on the bottom with the mask watching the instructor, who gives the Watch Me sign. The instructor deliberately floods his/her mask by pulling it slightly away from the face. When the mask is full, the instructor gives the OK sign, then the UP sign. After everyone is standing facing the instructor whose mask is full of water, the mask is drained by pulling it slightly away from the face. The pupils then do the exercise. This drill teaches the pupils not to become alarmed if the mask floods, but simply to surface and drain the water there. It also shows the difference in vision when the mask is filled with water rather than air. Once everyone is comfortable with the exercise, repeat 1 and 2 with the other buddy. (Note: Purging the mask while submerged is a scuba skill that may be shown as a bonus, but is intentionally not required for the Snorkeling award.)
3. Without the mask, one buddy bends over and breathes through the snorkel. When tapped on the shoulder by the other buddy on signal from the instructor, the pupil squats to fill the snorkel with water, returns to the facedown position, purges the snorkel with a blast of air, and then carefully resumes breathing. The exercise is repeated several times before the other buddy is given a turn.
4. Without the mask or snorkel, one member of each buddy team puts on fins, slips into the water, grasps the side in a prone position, and makes slow, wide kicks in place. Once adjusted to the flutter kick with fins, the group walks backward away from the pool side or dock, turns, and swims on the surface using only the legs until reaching the other end of the swimming area. The head is turned to the side for air if needed. On the way back, have the group swim part of the distance slightly underwater. Repeat with the other set of buddies.
5. Repeat 4, this time with mask and snorkel.
6. Move to the deep end of the swimming area. Demonstrate and practice a slide-in entry, a stride entry, and exits at either the side or a ladder. For the slide-in entry, the person puts on fins from a sitting position on the pool side, dock, dive-boat swim platform, or side of an inflatable and then slips into the water using the arms for support.

   For the stride entry into deep water, one leg is extended over the water from a standing position with one hand holding the mask in place. The legs are brought together as they submerge. Have each person give the surface OK sign after the stride entry. To exit at the side or a ladder, the fins are first removed and handed up.
7. With everyone sitting on the side at the deep end, show how to pinch the nostrils through the mask. Have everyone pinch their nose and blow gently until their ears feel full. Have them repeat several times. Then have one set of buddies slide into the water, push down with one hand, and do the equalization procedure underwater. Repeat with the other set of buddies.
8. Demonstrate and practice headfirst and feetfirst surface dives one set of buddies at a time, or individually as needed. The arms lead the head during a headfirst descent and during headfirst ascents.
9. Set out a dive flag and have buddies work together to retrieve objects from the bottom, using DOWN signs as appropriate.
10. Demonstrate and practice the displacement method of clearing a snorkel. (Mastery of this method is not required for the Snorkeling award.)
11. Demonstrate the DISTRESS sign, followed by demonstration and practice of floating and double armpit tow.

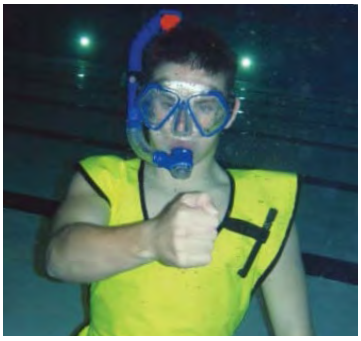
Diver Signals



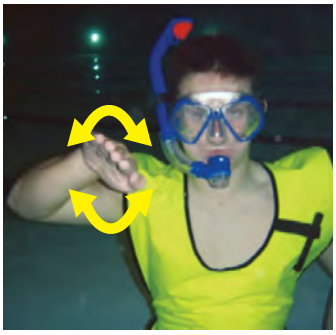
Help (with whistle)

OK? OK on surface

OK? OK below surface



Danger



Something is wrong.

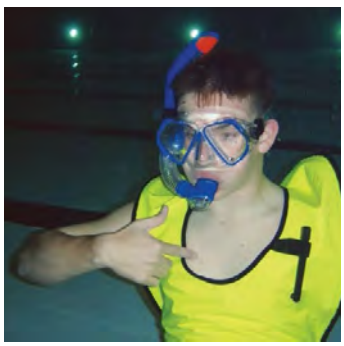
Stop.

Go up, going up

Go down, going down

Slow down.

Come here.



Me or watch me

Dive Physics

Light. Light rays entering the eye are focused on the retina by the lens. However, with water rather than air against the lens, light rays enter the eye at a slightly different angle, and the lens has a hard time compensating. You can see underwater, but objects are out of focus. A mask provides an air space in front of the eye so that light bends as normal at the air-to-eye interface and the eye can focus on underwater objects. However, now the light rays bend entering the mask. The amount of bending is such that objects appear slightly larger and closer than they would in air. Your mind normally is able to adjust quickly to the differences.

Water molecules and suspended particles in the water scatter and absorb light. The deeper you go, the darker it gets, and colors become washed out. A dive light or camera flash will reveal the true colors if the water is clear. The effect is not pronounced enough to hide the myriad colors of a tropical reef at depths easily reached by snorkelers.

Sound. Sound travels about four times faster through water than through air. You can hear well underwater and for long distances. However, your ears use time differences to determine direction, and that ability is distorted underwater. Your ears will warn you of an approaching motorboat, but you may not know where it is coming from. Also, sound bounces off layers with different velocity and density. Because the speed of sound in air and air density are both so much less than those of water, sounds made above the surface probably won't be heard underwater. Therefore, you may not hear the whistle for a buddy check until you surface. (That's just one reason why buddies should take turns underwater.)

Pressure. Your body is used to a pressure of one atmosphere (the weight of the column of air from sea level to outer space) of around 14 pounds per square inch. Because water weighs much more than air, pressure underwater increases rapidly with depth. Every 33 feet or so, you add another atmosphere, but you may feel the difference at depths around 8 feet. As you descend, the water pressure outside your chest squeezes your lungs and raises the air pressure in them. If air is free to travel from your lungs to your middle ear, the pressure of the air on the inside of your eardrum will match the pressure of the water on the outside. Your ears won't feel any pressure difference because there is none. However, if the Eustachian tubes that connect your lungs to your middle ear are blocked, the air pressure inside your ear remains the same as that at the surface, and pain will warn you of the mismatched pressure.

Some people can equalize the pressure in their ears simply by swallowing or moving their jaw. Most people will need to hold their nose and blow gently to move air through the Eustachian tube into the middle ear. That is why masks allow you to hold your nose from the outside. You can check your ability to equalize before a dive by holding your nose and blowing just enough for your ears to feel momentarily stuffy. Such an exercise may make it easier to later adjust underwater. However, people congested with a cold or allergy may not be able to equalize the pressure and should not try hard to force it. You will still be able to enjoy snorkeling near the surface; you just won't be able to dive deeply. Return to the surface whenever the pressure in your ears warns you to do so.

Like your ears, your mask is another enclosed volume of air that needs to adjust to pressure changes. Mask "squeeze" is rare because the mask covers your nose, and breathing through your nose will equalize the pressure. By now you should understand why swim goggles are not substitutes for a dive mask: there is no means for pressure equalization. Some surface swimmers also use earplugs to keep water out of their ears. Snorkelers should not use earplugs since the pressure during a surface dive may force them deeper into the ear canal.

Many people correctly associate the **bends**, caused by the release of gases dissolved in the blood, and other hazards of scuba diving with changes in pressure. However, breath-hold divers don't have the same concerns. If you dive to the bottom of a pool while breathing from a scuba tank, you will need to clear your ears,

but the situation is different. The pressure in your lungs goes up, not because they are squeezed, but because your air supply is under pressure. You breathe through a special valve, or regulator, that changes the high air pressure in your tank to match what you need at a given depth. You need to release the pressure in your lungs as you ascend to prevent damage. **Scuba divers should never hold their breath!** Because skin divers don't overpressure their system from an external source, the same problems don't arise. That is one reason swimmers are safe trying shallow surface dives on their own, but should never use scuba gear without qualified instruction.

Freedivers who breath-hold dive to extreme depths may encounter another pressure related problem. Exercise over time in the absence of breathing reduces the oxygen concentration in the blood through metabolism. Near the end of a deep dive oxygen is running low. However, the increased pressure at 30 to 60 feet or more increases the partial pressure of oxygen in the blood and may allow the diver to better utilize whatever oxygen remains. On ascent, the partial pressure drops and may result in the lose of consciousness. That is, blackout may be precipitated on ascent from depth by depressurization. Given that possibility, freedivers remove snorkels from their mouths for a descent as a safety precaution since the tube may offer a conduit to water entry if the person blacks out. Skin divers who stay within a few feet of the surface don't have that concern and often retain the snorkel in their mouths over multiple cycles of breathing through the snorkel at the surface, doing a quick shallow dive, and clearing the snorkel upon surfacing.

Blackouts from depressurization on ascent from depth often occur near the end of a deep free dive, that is, in relatively shallow water, of 10 feet or so, after going below 30 feet. That lead to labeling the problem as *shallow water blackout*. Unfortunately, that same term was also commonly applied to hypoxia (lack of oxygen available to tissues) caused by hypocapnia (reduced carbon dioxide blood levels). Hypocapnia delays the urge to breathe, is often associated with hyperventilation, and can lead to loss of consciousness at any depth, including the relatively "deep" end of a pool at 10 feet. Water Safety USA and its associated members discourage using the term *shallow water blackout* to avoid confusion, preferring instead *hypoxic blackout* which can include several mechanisms. Note that the danger of hypoxic blackout is why Scouting America prohibits breath holding contests, including training for or participation in competitive freediving.

Skin Diving - Freediving - Scuba Diving

Snorkels allow swimmers to breath freely while remaining face down at the surface to observe underwater features. Skin diving is snorkeling while making short, shallow dives for a closer look or to retrieve objects. In Scouting, snorkeling and skin diving activities fall under Safe Swim Defense policies with additional requirements for open water excursions. Scuba diving utilities a self-contained air supply to stay under longer and to go deeper. In Scouting, Scuba activities are governed by the Scouting America Scuba policy.

Freediving uses advanced breathing techniques and diving skills to increase time under water and to reach greater depths. Freediving activities include various sports such as underwater football or hockey, mermaiding, and various competitions with or without weights and fins. The Guide to Safe Scouting does not specifically mention freediving as a Scouting activity. However, it does fall under Safe Swim Defense. Since Scouting policies limit depths to 12 feet in clear water and prohibit competitive breath holding events, most if not all activities considered as freediving would not satisfy a Scouting America SAFE review.

Anyone considering freediving activities outside of the Scouting program is encouraged to seek training from an established agency, such as PADI.

Snorkeling in Open Water

Bold print in this section is official Scouting America guidance from the Guide to Safe Scouting. Additional comments are provided in regular font to expand on other aspects of Safe Swim Defense.

All ability groups may use snorkeling equipment within confined areas when following all Safe Swim Defense policies, including visibility for underwater swimming.

Snorkeling is a swimming activity in which one must abide by Safe Swim Defense policies, but the following additions to Safe Swim Defense apply when snorkeling is conducted in open water. "Open water" denotes a temporary swimming area of flexible extent in a natural body of water that may or may not be close to shore.

Qualified Supervision: In addition to Safe Swim Defense training and the 21-year-old minimum age, the supervisor must be an experienced snorkeler. At a minimum, the supervisor must possess skills and knowledge matching the Snorkeling Scouting America Award and have experience with environments similar to those of the planned activity.

Participant Ability: All participants in open-water snorkeling must either complete Scouting America's Snorkeling award requirements or be a certified scuba diver. Open-water is limited to Scouts BSA, Venturing and Sea Scouts.

Equipment: All snorkeling equipment must be properly fitted and in good repair. Full-face snorkel masks (combinations of a built-in snorkel with a mask that covers the mouth and nose) are prohibited. Use of individual flotation devices (inflatable snorkeling vests or life jackets) is required whenever there is a noticeable current or swells, when the bottom is not visible from the surface due to vegetation or limited visibility beyond 8 feet, or when the activity is greater than 50 yards from shore or craft.

A dive flag is required in areas shared by boats. Local regulations specifying the size of the flag and how far snorkelers may be from it must be followed. Weight belts may not be worn unless the participant has scuba certification. Dive boats should be equipped with radios and first-aid kits and should deploy safety lines.

Supervision. Unit leaders may rely on the expertise of other adults to supplement their knowledge and training. For example, they may delegate activity guidance and emergency response to a tour operator offering a snorkeling program, provided they are satisfied that the operator's training and experience will provide appropriate safeguards. However, registered leaders are still required to have Safe Swim Defense training, review health histories, confirm swimming abilities, and help with discipline.

Safe Area. Training in the use of snorkeling equipment to qualify participants for open water activities should be performed in clear water in a confined area that conforms to Safe Swim Defense guidelines. "Clear water" implies pool-like visibility. "Confined area" denotes either a pool or an established summer camp swimming area with direct access from the shore or a dock.

Safe conditions for open-water swimming and snorkeling depend on water clarity, area definition, depth, access, and other environmental factors. Snorkeling is limited to clear water. "Open water" denotes a temporary swimming area of flexible extent in a natural body of water that may not be close to shore.

An open-water snorkeling area need not have physical boundary markers, but the activity should be restricted within a specified distance of a point onshore, an anchored vessel, a moving rescue craft, or a float with a dive flag attached. Generally, a 50-foot radius is recommended, and may be dictated by local regulations concerning the use of a dive flag. The area covered by the snorkeling group should be small enough to allow rapid assistance from rescue personnel.

Emergency response places limitations on safe water depth as well as water clarity and area. Response personnel should be able to quickly and easily reach the bottom, locate, recover, and transport a submerged victim to shore or vessel. At the start of the activity, and periodically if the group moves along a reef or other feature, the response personnel should check their ability to see and to reach the bottom. The group should be directed toward shallower water whenever the responders experience any difficulty. (In Safe Swim Defense, 12 feet is designated as a reasonable maximum depth. In practice, slightly shallower or deeper depths may be appropriate. Different personnel will be able to easily recover objects from different depths, particularly if wearing fins. The practical way to confirm a safe depth is to test that the bottom is within comfortable reach of all designated rescue personnel.)

Limited or distant access to the snorkeling area may require additional considerations. Underwater features close to a sloping beach or near an anchored vessel are ideal. If the snorkeling site is a considerable distance from a beach or permitted anchoring location, the ability to rest becomes important and may restrict the activity close to shallow water or dictate the use of inflatable vests and/or small response craft. Tide tables should be consulted in areas with large tidal changes, especially when beach access is at the base of a cliff. Snorkeling in a river may require an exit point downstream of the entry.

Snorkeling should not be done if water depth, clarity, or temperature; boat traffic; waves; or current, weather, marine life, or bottom conditions, including vegetation, are deemed unsafe by the qualified supervisor. Time in the water should be adjusted based on water temperature and sun exposure. Snorkeling at night is limited to lighted pools unless the activity is conducted at a Scouting America nationally accredited high-adventure base.

Equipment. Protective clothing may be needed in some environments. Gloves are appropriate in areas with sharp rocks or encrusted structures. A shirt or a diver's bodysuit will provide limited protection from sun, abrasion, or coral burns and minor insulation in warm water. In temperate water, a partial or full wet suit may be worn. Weight belts may not be used unless the participants are certified scuba divers.

Lifesaving equipment in good repair should be ready for immediate use by response personnel. A flotation device is recommended, such as a rescue tube, bodyboard, or life jacket, supplemented, as appropriate, by reaching and throwing devices and small craft. Dive boats should be equipped with radios and first aid kits, and should deploy a safety line.

Response Personnel. The qualified supervisor is responsible for designating personnel for emergency response whenever lifeguards are not provided by a facility or tour operator. The snorkeling party should be divided into groups of two to eight swimmers with two responders, paired as buddies, assigned to each group. (Units may be divided by patrols or crews.) The responders should be competent swimmers with basic water-rescue skills. Emergency procedures, including entries, exits, and the role of everyone in the group, should be reviewed and practiced before the activity using rescue aids at the site. The responders should be stationed either afloat or ashore where they can see and hear all those in their group. Neither the responders nor the swimmers should face into the sun to see the other. Snorkelers in a group should remain off the same side of a vessel. Human powered inflatable or rigid dinghies, sit-on-top kayaks, or stand up paddleboards are appropriate response craft. The responders and snorkelers should remain close enough for rapid rescue, generally within 50 feet of one another. In some situations, the qualified supervisor may deem it appropriate for the responders to tow rescue aids while accompanying their group in the water.

Responders are responsible for surveillance as well as rescue. If there is more than one group, then a separate lookout, who may be the qualified supervisor, should coordinate the entire activity and monitor changing conditions. The lookout should have audible or visible means, such as an air horn or flag, to recall all groups. If a boat is used to transport snorkelers to the site, then at least one person should remain aboard who knows how to drive the boat and use the radio. A least one person in the party must be trained in CPR.

It is the combined responsibility of the adult supervisor, the lookout, and the responders to know the number of people in the water at all times and to make frequent visible confirmations of that number. Buddy boards and tags, or their equivalent, must be used to account for everyone in the water.

Buddy System. All participants in snorkeling activities are paired as buddies. Buddies should check each other's equipment prior to the activity and review hand signals. During the activity, they remain close enough that they are constantly aware of their buddy's location and condition. Generally, buddies should take turns making breath-holding dives. That is, one buddy remains at the surface, floating with his mask in the water while breathing through the snorkel, and keeps an eye on the buddy who is down. When the diver surfaces, both buddies check their position relative to the group before moving on or letting the other buddy dive.

The adult supervisor, lookout, or responders may call buddy checks as needed to keep the buddies together. Buddy checks may also be called to aid communication. Buddy pairs should be instructed to routinely watch for predetermined audible and visual signals of a buddy check.

Sea Base Adventures

Sea Base is a national high adventure program operating out of five locations, 3 in the Florida Keys and 1 each in Abacos Bahamas and the U.S. Virgin Islands. Scouting units may join approximately 16,000 yearly participants in 20 different programs such as sailing, remote island camping, coral reef restoration, scuba certification and live aboard dive boats. Almost all the programs involve either snorkeling or scuba diving. See https://seabaseha.org/ for details.

Scuba

Swimming underwater using a compressed air source involves the use of sophisticated equipment. Simple actions, such as holding the breath, can be deadly. Despite such complications, scuba activities as a whole have an excellent safety record. That record can be attributed in part to quality training programs adopted by the industry. Scouting relies on such training to provide safe scuba opportunities for its members.

Scuba training has several levels. Basic introductory experiences are conducted in pools with a small number of participants supervised by a certified instructor. Those completing such courses are given a taste of the sport under controlled conditions but are not prepared to dive on their own. The Scouting America Scuba award for qualified Scouts BSA, Scouters, Sea Scouts and Venturers is such a program. Requirements are found on the application in Appendix 3 of this manual. Additional information, including a brochure, is available online at https://www.scouting.org/outdoor-programs/aquatics/scuba-bsa/.

Slightly more advanced introductory courses offered by training agencies conclude with an open-water dive under close supervision. Open-water dives are not an option for the Scuba award.

Open-water certification courses provide the training needed for independent diving with a buddy and are normally required before a person is allowed to fill or rent tanks. Numerous tour operators and dive shops arrange group dive trips for people so certified. Standard open-water certification is offered only to those over a certain age. Junior diver certification is available for those below that age. Scouts BSA may obtain open-water certification as part of the Scuba Diving merit badge. Sea Scouts and Venturing crews may participate in scuba certification programs, appropriate to their age and current level of certification, that are conducted by recognized agencies.

Many recreational specialty courses are available to those with open-water certification. These include underwater photography, wreck diving, cave diving, cold-water diving, and diver rescue. Divers with a sufficient number of logged dives and additional training may qualify for a **divemaster** rating. Divemaster is the minimum qualification needed by the dive supervisor when certified divers engage in unit dives during Scouting activities.

All scuba instruction must be conducted by certified scuba instructors. A few Scout camps offer training programs, either the Scuba award, the merit badge, or both. The National High Adventure Sea Base offers both scuba certification and dive programs. Training may also be arranged through local PADI, NAUI, SSI, IDEA, PDIC, or SDI dive shops. The use of other dive training agencies is authorized under conditions found in the complete scuba policy statement that follows.

Scuba certification requires a level of preparation for underwater diving that Scouting America seeks for surface swimming via Safe Swim Defense and skill instruction. Every certified scuba diver has the knowledge, skills, and experience to recognize and minimize environmental risks, to move safely through the water, and to aid a buddy in distress. Drownings during recreational swimming would all but disappear if every member of the swimming public knew and observed basic safety rules, could swim well, and knew simple rescue techniques for themselves and others.

Scouting America Scuba Policy

Scouting America's scuba diving policy is applicable to scuba training/certification courses, and recreational diving activities by Scouting America members. In addition, council programs are subject to Scouting America National Camp Accreditation Program (NCAP). Scouting America recognizes scuba industry standards and implements them by using outside agencies for training and certification. Introductory scuba experience programs that are conducted in a swimming pool only must at a minimum meet the requirements set forth by the instructor's recognized scuba training agency.

Training and Supervision

Any diver possessing, displaying, or using scuba (self-contained underwater breathing apparatus) in connection with any Scouting-related activity must be either under the direct supervision of a recognized diving instructor or currently certified by a recognized agency. Any introductory scuba experience program or training/certification course must be conducted by a recognized diving instructor.

A recognized professional divemaster or instructor is any currently certified (renewed) divemaster or instructor in good standing with an agency recognized by the RSTC (Recreational Scuba Training Council), with professional liability insurance and is approved by the local Scouting America council.

Scuba Diving merit badge counselors are not required to be diving instructors. However, the merit badge requirement for earning an open water diver certification must be done under the supervision of a recognized diving instructor.

Recreational diving activities by Scouting America groups whose members are currently certified must be directly supervised by a responsible adult currently certified (renewed) as a divemaster, assistant instructor, or higher rating from a recognized agency. Dive environments, equipment, depths, procedures, supervision, and buddy assignments must be consistent with each individual's certification.

Because dives by recreational divers may be infrequent, the divemaster or instructor supervising a Scouting America scuba activity should screen participants prior to open-water activities and provide remedial instruction and practice as appropriate. Such remedial instruction and practice should be in accordance with the policies and standards of the divemaster's or instructor's agency for Scuba Review, Scuba Refresher, or similar program.

Diving using surface-supplied air systems is not authorized in connection with any Scouting America activity or facility except when done under contract by commercial divers.

Age-Appropriate Restrictions

Youth members registered in Cub Scout programs are not authorized to use scuba in any activity.

Registered members of Scouts BSA and older Scouting America youth programs (age 11 and above) may participate in the introductory Scouting America award program and scuba certification programs conducted by recognized agencies appropriate to their age and current level of certification.

Members of Scouting America programs, based on age, may participate in recreational group dives as unit, district, or council activities, provided such dives are consistent with their certifications and under direct supervision of a responsible adult currently certified as a divemaster, assistant instructor, or higher rating from a recognized agency.

Standards of the recognized scuba agencies require students for open-water certification programs to be at least 15 years of age but allow special certification programs for younger students. Since all instruction for Scouting

America scuba programs must be conducted by professionals certified by a recognized agency, additional agency-specific, age-related restrictions and protocols apply to students under 15 years of age.

The divemaster or instructor supervising a recreational dive by a Scouting America group must implement the following policies. Additional restrictions and protocols from the certifying agency may apply:

Depths are limited to 40 feet for divers under 12 years of age and to 60 feet for divers 12 to 14 years of age.

Additional divemasters or instructors are present to maintain a ratio of one trained supervisor to four buddy pairs (eight divers) containing one to four divers under 15 years of age.

In addition to the divemaster or trained supervisor, each diver under the age of 15 must have an assigned adult diver who is certified as an open water diver or higher rating as part of the dive group. It is recommended that no more than 3 youth under the age of 15 years of age may dive with the assigned adult diver.

Note: The 8:1 youth to trained supervisor ratio is a maximum ratio and should be reduced based upon weather, water conditions including current, surface conditions and visibility, participants comfort and skill level and the ability of the divemaster or instructor to control the group.

Medical Contraindications

Each scuba training agency recognized by Scouting America requires a specific health history form be completed prior to enrollment in a certification program (e.g., RSTC Diver Medical Participant Questionnaire). Scouting America requires review and approval of the completed form by a physician. Various risk factors identified on the forms may exclude a person from scuba training, either temporarily or permanently. Risk factors include, but are not limited to, ear and sinus problems, recent surgery, spontaneous pneumothorax, asthma or reactive airway disease (RAD), seizure disorders, diabetes, cardiac disorders, leukemia, sickle-cell disorder, pregnancy, panic disorders, and active psychosis.

The divemaster or instructor supervising a Scouting America recreational scuba activity/introductory scuba experience program must review the annual health information (i.e., Scouting America AHMR and RSTC Diver Medical Participant Questionnaire) and evaluate risk conditions using medical standards consistent with those used by their certifying agency and Scouting America. Additional tests or physician consultations may be required to confirm fitness for diving. Consultation with medical specialists knowledgeable about diving medicine (Divers Alert Network's 24-hour hotline) may be needed. If the scuba activity is conducted as part of a council program, then approval to dive is also subject to review and confirmation by the camp health officer and/or medical director/ Council Health Supervisor.

The following medical contraindications are based on Scouting America operational considerations and may be more conservative than those listed in the "Diving Medical Guidance to the Physician."

1. **Diabetes Mellitus**. Diabetes must be well-controlled. Hypoglycemia can lead to unconsciousness and drowning
    - Diving as part of an official Scouting activity is prohibited for the following:
        a. For persons under age 18 with the diagnosis of diabetes.
        b. Persons using insulin to control diabetes.
        c. Persons with diabetes, who are non-insulin dependent and who have had recurrent problems and/ or hospitalizations for diabetic problems.
        d. Persons with any HbA1c test greater than 7.0 in the previous 12 months.
        e. Persons having a documented or suspected hypoglycemic event requiring treatment or assessment in the previous 12 months.
    - Diabetes is considered well-controlled when the following are met:

a. The acceptable oral medications for diabetic control are as single agents only: metformin and metformin analogs; DPP-4 inhibitors (sitagliptin, vildagliptin, alogliptin, saxagliptin and linagliptin); or SGLT2 inhibitors and analogies.

b. Persons who control their diabetes with exercise and diet (without the aid of medication, except metformin) and document HbA1c test value less than 7.0 in the last 6 months may be approved to scuba dive.

2. Seizures or Epilepsy. Seizures while snorkeling or scuba diving are extremely dangerous and often fatal.

- Diving as part of an official Scouting activity is prohibited for participants with a history of seizures.
- Prospective participants with a history of infant febrile seizures may be considered for diving after formal consultation with a neurologist.

3. Asthma or Reactive Airway Disease.

- Diving as part of an official Scouting activity is prohibited for persons being treated for asthma or reactive airway disease.
- Persons with a history of asthma who have been asymptomatic and have not used medications to control asthma for five years or more may be allowed to scuba dive if resolution of asthma is specifically confirmed by their physician and includes provocative pulmonary function testing. Provocative testing can include exercise, hypertonic saline, a hyperpnea test, etc.

4. Psychological and Emotional Difficulties (ADD, ADHD, anxiety, and depression). Any condition should be well-controlled. Many medications are not compatible with scuba diving.

- Diving as part of an official Scouting activity is prohibited for the following:
  a. Participants taking more than one medication for any of these conditions.
  b. Participants with anxiety disorder requiring any medication.

5. Severe Risk Factors. Diving as part of an official Scouting activity is prohibited for persons with conditions listed as "severe" by the Undersea & Hyperbaric Medical Society (UHMS). See: UHMS Diving Medical Guidance to the Physician (2020).

Youth, parents, dive supervisors, and physicians with questions or concerns about diving with specific medical conditions should consult the UHMS Diving Medical Guidance to the Physician, Recreational Scuba Training Council (RSTC) and the Divers Alert Network (DAN). DAN medical professionals are available for non-emergency consultation by telephone at 919-684-2948 during business hours or via email.

Recognized Agencies

Recognized agencies are:

- PADI: Professional Association of Diving Instructors
- NAUI: National Association of Underwater Instructors
- SSI: Scuba Schools International
- IDEA: International Diving Educators Association
- PDIC: Professional Diving Instructors Corporation
- SDI/TDI: Scuba Diving International
- YMCA Scuba Program (discontinued in 2008, but certification cards are still recognized)
- NASDS: National Association of Scuba Diving Schools (merged with SSI, but certification cards are still recognized)
- IANTD: International Association of Nitrox and Technical Divers
- RAID: Rebreather Association of International Divers
- SNSI: Scuba and Nitrox Safety International
- NASE: National Academy of Scuba Educators

In addition to the agencies listed by name, any current member of the World Recreational Scuba Training Council (WRSTC), which includes all RSTC members, is also recognized.

Camp Scuba Programs

Detailed standards for conducting scuba programs at national or council camps are contained in the latest version of the National Camp Accreditation Program (NCAP) standards. Highlights include:

- Scuba programs offered at Scouting America camps must be conducted in a safe manner in accordance with the Guide to Safe Scouting, the Scouting America Scuba Policy and applicable industry requirements.
- Unless the camp is a nationally accredited scuba adventure program, camp scuba programs must be supervised by a recognized scuba contractor meeting the requirements of the NCAP standards.
- Local council programs may not compress or sell air for scuba use, or sell, rent, or loan scuba equipment (scuba cylinders, regulators, gauges, dive computers, weights, or BCDs). All air and equipment for local council program use must be obtained from professional sources (dive stores, resorts, dive boats, etc.) affiliated with a scuba agency recognized by Scouting America. Use of personal air or equipment is not authorized.
- If dive boats are used in the program, NCAP standards specify license and certification requirements for both vessels and crew.

Review Questions for Section II

1.0 List the eight points of Safe Swim Defense.

1.

2.

3.

4.

5.

6.

7.

8.

2.1 Maximum recommended depth for the swimmer area in clear water is

A. 8 feet
B. 10 feet
C. 12 feet
D. 14 feet

2.2 Beginners should be restricted to water depths

A. Waist deep
B. Chest deep
C. Chin deep
D. Just over the head

2.3 Nonswimmers should be restricted to water depths no more than

A. Knee deep
B. Waist to chest deep
C. Chin deep
D. Just over the head

3.1 Water depth for headfirst entry from pool side into clear water must be at least

A. 5 feet
B. 7 feet
C. 9 feet
D. 11 feet

3.2 Water depth for headfirst entry from a low height (around 3 feet) must be

A. At least 12 feet in murky water
B. At least 8 feet in clear water
C. Consistent with state regulations for diving boards
D. At least 12 feet in clear water

3.3 Feetfirst entry should be limited to heights no greater than

A. Knee high
B. Waist high
C. Chest high
D. Head high

4.1 Underwater swimming is prohibited

A. In water less than 3 feet deep
B. At night
C. In murky or turbid water
D. When water temperature is less than 70°

4.2 Swimming activity must be curtailed when

A. The sky is overcast
B. There is intermittent drizzle
C. There is thunder or lightning
D. All of these

4.3 Having swimmers wear life jackets should be considered

A. In clear water over 12 feet deep
B. In murky water over head height
C. In weak current
D. All of these

5.1 A buddy check is conducted

A. Approximately every 10 minutes
B. When Scouts are disruptive
C. During an emergency
D. For all of these

5.2 The *primary* purpose of a buddy check is to

A. Check the number of people in the water
B. Reinforce the buddy concept
C. Signal the end of the period
D. Clear the area in an emergency

5.3 During a unit swim, a record of buddies and their ability groups may be kept by

A. Using buddy tags and a portable buddy board
B. Using sticks with printed names
C. Using a written list
D. Any of these

6.1 Surveillance (that is, monitoring swimmers for signs of trouble) is the responsibility of

A. The lifeguards
B. The lookout
C. Each buddy
D. All of these

6.2 A lookout should be

A. A strong swimmer
B. Provided with rescue equipment
C. Coached in effective surveillance techniques
D. All of these

6.3 Rescue personnel (lifeguards) should be

A. Strong swimmers
B. Provided with rescue equipment
C. Coached in appropriate rescue techniques
D. All of these

7.1 Generally, headfirst diving is appropriate at

A. Above ground pools
B. Small backyard pools
C. An ocean beach
D. None of these

7.2 Which of these is a possible concern at an above ground pool?

A. Depth is too shallow for beginner and swimmer areas
B. Water clarity
C. Current
D. The water is too deep for some nonswimmers

7.3 Emergency action plans for backyard pools should include

A. A quick, reliable means to summon EMS
B. Use of rescue equipment
C. Means for removing an incapacitated person from the water
D. All of these

8.1 Everyone in the unit should be involved in setting up a safe swim area.

T F

8.2 A lookout is needed even when a small group is setting up a swim area.

T F

8.3 In turbid water, a single swimmer with a lifeline checks deepwater areas by doing a headfirst surface dive and swimming along the bottom with arms extended.

T F

9.1 A unit with only beginners and swimmers needs three ability group areas at a temporary lakefront setting.

T F

9.2 If bottom slopes and depths are less than ideal, ability groups may swim together in an area appropriate for those of the lesser classification.

T F

9.3 Access to the swimmers area should be through the nonswimmer and beginner areas.

T F

10.1 At a bend in a river, the deepest water and strongest current is

A. On the inside of the curve
B. Midstream
C. On the outside of the curve
D. Totally unpredictable

10.2 The preferred location for a swimming area on a river is often

A. On the upstream end of a sandbar on the inside of a bend
B. On the protected downstream end of a sandbar on the inside of a bend
C. In the deeper water on the outside of a bend
D. In an area where the water covers grass rather than sand

10.3 Which of the following is a sign that a river is higher than normal?

A. Exposed sandbars
B. Strainers along the cut bank
C. Water flowing over grass
D. Debris resting high in trees

11.1 Which of the following is a major safety concern at an ocean beach, responsible for more rescues than any other?

A. Undertow
B. Drift current
C. Rip current
D. Surf

11.2 Which of the following are potential hazards, particularly for nonswimmers?

A. Backwash
B. Troughs caused by drift currents
C. Tidal shelf
D. All of the above

11.3 Of the following, which is most suitable for swimming?

A. Rip currents
B. Spilling waves
C. Plunging waves
D. Surging waves

12.1 Which of the following is a reasonable precaution when swimming from a boat in deep water with a slight current?

A. Swimmers only
B. Wearing a life jacket
C. Swimming up-current of a safety line
D. All of the above

12.2 When swimming from a large boat, rescue personnel may be stationed

A. On the vessel
B. In a dinghy
C. On a paddleboard
D. Any of the above as appropriate

12.3 Which of the following is not allowed?

A. Distance swimming along a protected, closed circuit
B. Venturing triathlon training
C. Distance swimming in open water accompanied by a lone person in a rowboat
D. A and C

13.1 For a unit swim at a public pool with professional lifeguards on duty:

A. Safe Swim Defense principles don't apply
B. Unit rescue personnel need not be deployed
C. The buddy system is not used
D. All of these

13.2 At a location with professional lifeguards, the unit leader is responsible for

A. Taking any precautions indicated by medical concerns
B. Implementing a buddy system
C. Restricting nonswimmers to shallow water
D. All of the above

13.3 At a location with professional lifeguards, which of the following is not a common expectation of the lifeguards?

A. Surveillance for drowning situations
B. Implementing emergency action plans, including water rescue
C. Administering and enforcing swimmer classifications
D. Enforcing rules against diving in shallow water

14.1 Ideally, youth should learn basic swimming skills before Scouts BSA age, that is, early during Cub Scouting.

T F

14.2 Attention spans and motivations are the same for 6- and 16- year old learners.

T F

14.3 Basic swimming skills are always best taught in a large group by a highly trained professional rather than individually by a knowledgeable parent.

T F

15.1 All conscious drowning victims will call out for help.

T F

15.2 A child apparently playing in deep water could actually be drowning.

T F

15.3 Nonswimmers falling off an air mattress into deep water can generally save themselves by lunging for the float.

T F

16.1 A person may lose consciousness and submerge due to

A. Drowning
B. A heart attack
C. A diving injury
D. All of the above

16.2 While speedy rescue is very important in any situation, which of the following is the *most* urgent?

A. A tired swimmer barely able to stay afloat
B. A distressed swimmer calling for help
C. A submerged passive victim
D. A swimmer caught in a current

16.3 For which type of victim will rescue always involve physical contact?

A. A tired swimmer
B. A distressed swimmer
C. An actively drowning nonswimmer
D. A passive, submerged victim

17.1 A throwing rescue is normally not useful for which types of victims?

A. Distressed swimmers
B. Endangered swimmers
C. Submerged or spinal injury victims
D. Tired swimmers

17.2 The preferred order of rescue methods is

A. Wade, row, go
B. Reach, wade, row, go
C. Reach, throw, row, go
D. Extension, tow, carry

17.3 A reach pole is swept to a victim from the side to

A. Prevent the victim from lunging into the end of the pole
B. Bring the pole into physical contact with an active drowning victim
C. A and B
D. None of the above; the pole should be extended directly toward the victim's chest

18.1 Which throwing device is generally easier to use effectively?

A. A ring buoy without a line
B. A ring buoy with line attached
C. A throw bag
D. A heaving line

18.2 The preferred way to coil a line is

A. Wrapping between the hand and elbow
B. Moving both hands apart and together
C. Fixing one hand and moving in and out with the other
D. Laying coils at your feet

18.3 When retrieving a ring buoy for a second attempt, the line should be

A. Coiled as before
B. Dropped loosely at the feet
C. Left floating in the water
D. Wrapped around the buoy

19.1 Rowing rescues are more effectivewith two people in separate boats rather than two people in a single boat.

T F

19.2 Conscious victims should be lifted into a rescue boat as soon as possible.

T F

19.3 An effective rowing assist should incorporate reaching and throwing devices.

T F

20.1 In-water rescues can be divided into noncontact and contact rescues..

T F

20.2 Noncontact rescues are used for unconscious subjects.

T F

20.3 Untrained, poor swimmers should avoid in-water rescue attempts.

T F

21.1 A flotation aid is recommended in case an in-water assist is needed.

T F

21.2 The rescuer always grasps the victim during an in-water rescue.

T F

21.3 Suggested entries include long shallow dives for an in-water rescue.

T F

22.1 During an accompanied rescue, the rescuer releases the flotation aid after shoving it into the victim's grasp because

A. The victim may have better support
B. The victim will tend to grasp the device rather than the rescuer
C. A tow can still be initiated if needed
D. All of the above

22.2 After approaching a victim in an accompanied rescue them

A. Help is at hand
B. You will push them a float
C. They should grasp the float firmly
D. All of the above

22.3 A contact assist is needed when the victim cannot grasp a flotation aid due to

A. Unconsciousness
B. A stroke or other debilitating condition
C. Numbness due to cold
D. Any of the above, plus others

23.1 The wrist tow can be used if

A. The victim is at the surface
B. The victim is floating beneath the surface
C. The victim is resting facedown on the bottom
D. All of the above

23.2 The wrist tow may be used

A. When the victim is wearing a life jacket
B. When the victim is conscious, but passive
C. As a tow in rough water
D. All of the above

23.3 The wrist tow may be used

A. From a front approach
B. To place the victim across a flotation device
C. For unconscious victims without spinal injury
D. All of the above

24.1 Prompt medical attention is needed for all submerged victims recovered unresponsive from the bottom.

T F

24.2 If a swimmer is missing in deep, turbid water, all members of the unit should quickly begin a random search of the bottom.

T F

24.3 Required life jacket use is a reasonable precaution in deep, turbid water if the unit is poorly prepared to conduct an organized underwater search.

T F

25.1 A spinal injury should be suspected when

A. A person's head strikes anything but the water
B. A person is struck with a foam noodle
C. The rescuer does a head-hold escape
D. Any of the above

25.2 If a spinal injury is indicated for a passive, face-down person, first

A. Check for breathing and circulation
B. Ask the person to gently roll his head
C. Ask if the person feels numbness
D. Use in-line stabilization to turn the person face up and summon EMS

25.3 In-line stabilization using head splint support may not be appropriate when the victim

A. Has arms to the side
B. Has only one arm
C. Is faceup in deep water
D. Is facedown in shallow water

26.1 The line-and-tender procedure requires two swimmers, a line, and a life jacket.

T F

26.2 The line-and-tender procedure requires minimal equipment and training.

T F

26.3 The line-and-tender procedure should be familiar to many Scouts BSA since it is included in rank advancement.

T F

27.1 The preventive elements of Safe Swim Defense minimize the need for rescues.

T F

27.2 Preventive elements of Safe Swim Defense eliminate the need for rescues.

T F

27.3 In urban settings, quick EMS response is sufficient preparation for emergencies.

T F

28.1 Essential elements in unit swim protection include

A. Continuous, effective monitoring of everyone
B. Persons trained in rescue procedures
C. An emergency action plan, including communication with EMS
D. All of the above

28.2 Swimmers are continuously surveyed by

A. The buddy
B. The lookout
C. Response personnel (lifeguards)
D. All of the above

28.3 For large groups, surveillance areas assigned the safety team should be

A. Redundant total coverage by all personnel
B. Individual zones with slight overlap
C. Individual zones with total overlap
D. Total coverage combined with overlapping zones

29.1 Response personnel are generally best deployed as

A. Individuals watching separate zones
B. Individuals whose scans include responders in adjacent zones
C. Buddy pairs watching overlapping areas and each other
D. Buddy pairs watching separate zones

29.2 During a rescue, the rescuer's buddy

A. Stands by to assist
B. Provides backup surveillance of the rescuer's assigned zone
C. Helps the lookout clear the area
D. Reacts according to the emergency action plan

29.3 Which of the following are inappropriate functions of safety team members on duty?

A. Continuous surveillance of assigned areas
B. Intervening to stop rule infractions or to provide emergency aid
C. Refereeing a game or assisting a person with a skill
D. Providing backup surveillance and supervision of swimmers not involved in a rescue situation

30.1 Basic signals should include those for:

A. Initiating a buddy check
B. Ending the swim activity
C. Emergency response needed
D. A and C

30.2 Whistles should be used frequently at unit swim events

T F

30.3 Dialing 9-1-1 is always the appropriate way to contact off-site emergency medical services

T F

31.1 The aquatic activity Emergency Action Plan should include:

A. Designation of safety team members
B. Likely emergencies that could happen
C. Communication signals
D. All of the above

31.2 Safety team members should wait for direction from the activity supervisor before responding to an emergency.

T F

31.3 The Safety Team has how many primary duties?

A. 3
B. 4
C. 5
D. 6

32.1 A safety team needs no other equipment to protect a unit swim

T F

32.2 Suggested items for a Safe Swim Defense kit include:

A. Cell phone
B. Boundary area markers
C. Rescue line
D. All of the above

32.3 Round buddy tags are required for tracking buddies during a unit swim

T F

33.1 Snorkeling safety guidelines extend Safe Swim Defense by adding which of the following?

A. Consideration of equipment
B. Limitations on water clarity for training
C. Training requirements for open-water snorkeling
D. All of the above

33.2 The instructor for the Scuba award must have council approval and have current certification by a recognized agency as

A. Open-water diver
B. Divemaster
C. Scuba instructor
D. Any of the above

33.3 Scouting America has a Scuba Policy that defines aspects for scuba diving done as a Scouting activity.

T F

Boating Skills and Safety

Section III

Chapter 13

Safety Afloat

All boating activities in Scouting are required to follow the nine basic principles known collectively as Safety Afloat. During the 1970s, public interest in river canoeing experienced a huge surge in popularity with a corresponding increase in the number of fatalities. Scouting's response was to devise a set of safety guidelines for float trips based on the successful Safe Swim Defense plan. The emphasis is on accident prevention through proper preparation and skill. A unit that follows Safety Afloat may expect a safe, enjoyable experience.

A summary of Safety Afloat appears in Chapter 3. The complete text is given here in bold type with additional explanatory material in regular print. The most up-to-date version is maintained online at this link: Safety Afloat, or via the QR code. Training is provided online at my.scouting.org.

Scouting America groups shall use Safety Afloat for all boating activities. Adult leaders supervising activities afloat must have completed Safety Afloat training within the previous two years. Cub Scout activities afloat are limited to council, district, pack, or den events that do not include moving water or float trips (expeditions). Safety Afloat standards apply to the use of canoes, kayaks, rowboats, rafts, floating tubes, sailboats, motorboats (including waterskiing), and other small craft, but do not apply to transportation on large commercial vessels such as ferries and cruise ships. Parasailing (being towed airborne behind a boat using a parachute), kite-surfing (using a wakeboard towed by a kite), and unit-level recreational use of personal watercraft (small sit-on-top motorboats propelled by water jets) are not authorized Scouting America activities.

Safety Afloat training may be obtained from my.scouting.org, at council summer camps, and at other council and district training events. Additional guidance on appropriate skill levels and training resources is provided in Aquatics Supervision.

1. Qualified Supervision

All activity afloat must be supervised by a mature and conscientious adult age 21 or older who understands and knowingly accepts responsibility for the well-being and safety of those in his or her care and who is trained in and committed to compliance with the nine points of Scouting America's Safety Afloat. That supervisor must be skilled in the safe operation of the craft for the specific activity, knowledgeable in accident prevention, and prepared for emergency situations. If the adult with Safety Afloat training lacks the necessary boat operating and safety skills, then they may serve as the supervisor only if assisted by other adults, camp staff personnel, or professional tour guides who have the appropriate skills. Additional leadership is provided in ratios of one trained adult, staff member, or guide per 10 participants. For Cub Scouts, the leadership ratio is one trained adult, staff member, or guide per five participants. At least one leader must be trained in first aid including CPR. Any swimming done in conjunction with the activity afloat must be supervised in accordance with Scouting America's Safe Swim Defense standards. In when swimming is conducted in conjunction with towed activities or from a motorized watercraft, a designated observer or lookout must be no less than 18 years of age and be present on the watercraft. It is strongly recommended that all units have at least one adult or older youth member currently trained in Scouting America's Aquatics Supervision: Paddle Craft Safety to assist in the planning and conduct of all activities afloat.

The purpose of this publication is to provide unit leaders with sufficient information to confidently know when they meet expectations set forth in the first point. This book also serves as the text for training in Scouting America's Paddle Craft Safety.

2. Personal Health Review

A complete health history is required of all participants as evidence of fitness for boating activities. Forms for minors must be signed by a parent or legal guardian. Participants should be asked to relate any recent incidents of illness or injury just prior to the activity. Supervision and protection should be adjusted to anticipate any potential risks associated with individual health conditions. For significant health conditions, the adult supervisor should require an examination by a physician and consult with parent, guardian, or caregiver for appropriate precautions.

This important item is shared with Safe Swim Defense and was covered in Chapter 4.

3. Swimming Ability

Operation of any boat on a float trip is limited to youth and adults who have completed the Scouting America swimmer classification test. Swimmers must complete the following test, which should be administered annually.

Jump feetfirst into water over the head in depth. Level off and swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.

For activity afloat, those not classified as a swimmer are limited to multiperson craft during outings or float trips on calm water with little likelihood of capsizing or falling overboard. They may operate a fixed-seat rowboat or pedal boat accompanied by a buddy who is a swimmer. They may paddle or ride in a canoe or other paddle craft with an adult swimmer skilled in that craft as a buddy. They may ride as part of a group on a motorboat or sailboat operated by a skilled adult.

Note that this directive allows flexibility for those with poor swimming skills to participate, primarily as passengers, in various situations. However, only swimmers may participate in whitewater activities.

4. Life Jackets

Properly fitted life jackets with U.S. Coast Guard approval for the activity must be worn by all persons while boating. Check the life-jacket label for performance, turning ability, and warnings. Some life jackets are NOT approved for water skiing, wakeboarding, tubing, personal watercraft, or whitewater paddling.

For vessels over 20 feet in length, life jackets need not be worn when participants are below deck or on deck when the qualified supervisor aboard the vessel determines that it is prudent to abide by less-restrictive state and federal regulations concerning the use and storage of life jackets, for example, when a cruising vessel with safety rails is at anchor. All participants not classified as swimmers must wear a life jacket when on deck under way.

Life jackets need not be worn when an activity falls under Safe Swim Defense guidelines—for example, when an inflated raft is used in a pool or when snorkeling from an anchored craft.

Life jackets with tears and inoperable buckles do not meet Coast Guard standards. Proper fit, including correct sizing and fastening, is just as important as Coast Guard approval. The Chapter 14 provides additional information on life jacket selection, fit, and use.

5. Buddy System

All participants in an activity afloat are paired as buddies who are always aware of each other's situation and prepared to sound an alarm and lend assistance immediately when needed. When several craft are used on a float trip, each boat on the water should have a "buddy boat." All buddy pairs must be accounted for at regular intervals during the activity and checked off the water by the qualified supervisor at the conclusion of the activity. Buddies either ride in the same boat or stay near one another in single-person craft.

Buddy tags and boards are often used at Scout summer camps where boating is done in a limited area with the same launch and landing site. That specific tracking system is not required for a unit float trip, but the unit leader must have an unambiguous means to ensure that everyone who ventures on the water also gets off the water when expected.

6. Skill Proficiency

Everyone in an activity afloat must have sufficient knowledge and skill to participate safely. Passengers should know how their movement affects boat stability and have a basic understanding of self-rescue. Boat operators must meet government requirements, be able to maintain control of their craft, know how changes in the environment influence that control, and undertake activities only that are within their personal and group capabilities.

Content of training exercises should be appropriate for the age, size, and experience of the participants, and should cover basic skills on calm water of limited extent before proceeding to advanced skills involving current, waves, high winds, or extended distance. At a minimum, instructors for canoes and kayaks should be able to demonstrate the handling and rescue skills required for Aquatics Supervision: Paddle Craft Safety. All instructors must have at least one assistant who can recognize and respond appropriately if the instructor's safety is compromised.

Anyone engaged in recreational boating using human-powered craft on flatwater ponds or controlled lake areas free of conflicting activities should be instructed in basic safety procedures prior to launch, and allowed to proceed after they have demonstrated the ability to control the boat adequately to return to shore at will.

For recreational sailing, at least one person aboard should be able to demonstrate basic sailing proficiency (tacking, reaching, and running) sufficient to return the boat to the launch point. Extended cruising on a large sailboat requires either a professional captain or an adult with sufficient experience to qualify as a bareboat skipper.

Motorboats may be operated by youth, subject to state requirements, only when accompanied in the boat by an experienced leader or camp staff member who meets state requirements for motorboat operation. Extended cruising on a large powerboat requires either a professional captain or an adult with similar qualifications.

Before a unit using human-powered craft controlled by youth embarks on a float trip or excursion that covers an extended distance or lasts longer than four hours, each participant should either receive a minimum of three hours training and supervised practice or demonstrate proficiency in maneuvering the craft effectively over a 100-yard course and recovering from a capsize.

Self-guided unit trips on Class III (including III- and III+) whitewater may only be done after all participants have received American Canoe Association or equivalent training for the class of water and type of craft involved. Unit trips on whitewater sections of rivers rated Class IV (including III- and III+) are only allowed in rafts with a professionally trained guide in each raft. Trips above Class IV are not allowed.

Skill is an important component for an enjoyable, safe activity afloat. Because skills must be learned, Safety Afloat provides for novice participation in a controlled, safe teaching environment with progressively more skill expected as the participant moves to independent control of the craft in a remote setting. The specific skills required for different craft in various situations are too diverse to detail in a general policy statement. Instead, Safety Afloat depends on unit leadership's prior awareness of skill levels appropriate for an activity. Leaders without that awareness should recruit experienced assistants with such knowledge to supervise an event afloat. Chapters that follow address various skills needed for different craft, as well as river classification systems.

7. Planning

Proper planning is necessary to ensure a safe, enjoyable exercise afloat. All plans should include a scheduled itinerary, notification of appropriate parties, communication arrangements, contingencies in case of foul weather or equipment failure, and emergency response options.

Preparation. Any boating activity requires access to the proper equipment and transportation of gear and participants to the site. Determine what state and local regulations are applicable. Get permission to use or cross private property. Determine whether personal resources will be used or whether outfitters will supply equipment, food, and shuttle services. Lists of group and personal equipment and supplies must be compiled and checked. Even short trips require selecting a route, checking water levels, and determining alternative pull-out locations. Changes in water level, especially on moving water, may pose significant, variable safety concerns. Obtain current charts and information about the waterway and consult those who have traveled the route recently.

Float Plan. Complete the preparation by writing a detailed itinerary, or float plan, noting put-in and pull-out locations and waypoints, along with the approximate time the group should arrive at each. Travel time should be estimated generously.

Notification. File the float plan with parents, the local council office if traveling on running water, and local authorities if appropriate. Assign a member of the unit committee to alert authorities if prearranged check-ins are overdue. Make sure everyone is promptly notified when the trip is concluded.

Weather. Check the weather forecast just before setting out, and keep an alert weather eye. Anticipate changes and bring all craft ashore when rough weather threatens. Wait at least 30 minutes before resuming activities after the last incidence of thunder or lightning.

Contingencies. Planning must identify possible emergencies and other circumstances that could force a change of plans. Develop alternative plans for each situation. Identify local emergency resources such as EMS systems, sheriff's departments, or ranger stations. Check your primary communication system, and identify backups, such as the nearest residence to a campsite. Cell phones and radios may lose coverage, run out of power, or suffer water damage.

This item reinforces the Scout motto: Be Prepared.

8. Equipment

All craft must be suitable for the activity, be seaworthy, and float if capsized. All craft and equipment must meet regulatory standards, be properly sized, and be in good repair. Spares, repair materials, and emergency gear must be carried as appropriate. Life jackets and paddles must be sized to the participants. Properly designed and fitted helmets must be worn when running rapids rated Class II (including II- and II+) and above. Emergency equipment such as throw bags, signal devices, flashlights, heat sources, first aid kits, radios, and maps must be ready for use. Spare equipment, repair materials, extra food and water, and dry clothes should be appropriate for the activity. All gear should be stowed to prevent loss and water damage. For float trips with multiple craft, the number of craft should be sufficient to carry the party if a boat is disabled, and critical supplies should be divided among the craft.

Proper equipment depends on the kind of craft as well as the type and duration of the activity. Someone who has conducted a similar activity should be a valuable resource—experience is hard to beat.

9. Discipline

Rules are effective only when followed. All participants should know, understand, and respect the rules and procedures for safe boating activities provided by Safety Afloat guidelines. Applicable rules should be discussed prior to the outing and reviewed for all participants near the boarding area just before the activity afloat begins. People are more likely to follow directions when they know the reasons for rules and procedures. Consistent, impartially applied rules supported by skill and good judgment provide stepping stones to a safe, enjoyable outing.

Like the bread that holds together a sandwich, discipline and qualified supervision are the foundation and cover that make safe Scouting a reality. Scouts are accustomed to following rules in other situations and will likely also be well-behaved during boating events. That is particularly true if the Scouts are reminded of their dual responsibility for their own safety and that of others in the unit. Youth leaders should share in decisions and guidance. However, youthful exuberance may at times cause momentary lapses in attention. That is, fun and a sense of adventure can overwhelm common sense. Dealing with such situations is a learning experience for youth and leaders, but leaders should realize that youngsters cannot always be expected to act rationally in the interest of their own safety. Adult leaders should therefore accept that they, not the Scouts, are ultimately responsible for implementing Scouting America rules and procedures.

Chapter 14

Life Jackets

State regulations mandate that children under a specific age, ranging from six to seventeen, must wear a life jacket on recreational boats. Most set the limit for those twelve and under to match regulations for waters under federal jurisdiction. Exceptions to mandatory wear exist if the child is below deck, in an enclosed cabin, or if the boat is not under way. An appropriate, easily accessible life jacket must be carried for all adults, including those towed behind the craft. Scouting America policy is more stringent: **Properly fitted life jackets with U.S. Coast Guard approval for the activity must be worn by all persons while boating.**

This chapter covers how to determine if a life jacket is the proper size, is adjusted for a good fit, and is approved for a specific activity, such as water skiing, personal watercraft,or whitewater paddling. The first step in life jacket selection is to read the label. Any life jacket used according to the label is appropriate for Scouting America boating activities. However, Level 70 devices without exclusion icons are generally recommended.

Note: For vessels over 20 feet in length, Scouting America policy states that life jackets need not be worn when participants are below deck or on deck when the qualified supervisor aboard the vessel determines that it is prudent to abide by less-restrictive state and federal regulations concerning the use and storage of life jackets, for example, when a cruising vessel with safety rails is at anch

According to the U.S. Coast Guard, 87 % of those who drown while boating in 2023 were not wearing a life jacket. That's 7 out of 8. Statistics for previous years are very similar. Many of those who drown while boating reportedly knew how to swim.

WEAR YOUR LIFE JACKET! It's policy and the smart thing to do.

Labels

Standards dictate the content of labels printed on life jackets. A generic version is provided below and explained under headings that follow. Many labels have duplicate information in Spanish and/or French. A different label was used prior to 2020. Life jackets with older labels are still approved so long as they are in good condition.

ADULT
UNIVERSAL

User Weight: >41 kg (>90 lbs)
Chest Size: 76-132 cm (30-52 in.)

- Drowning hazard if not worn.
- Must be fastened and properly adjusted to float the wearer.

Choose and wear the device which fits you and your activity, visit www.wearitlifejacket.org.
Read and keep the owner's manual and tags for info such as rearming, wear, and care.

Company Name
Company Address
Company website if available
Made in XXXXX

Lab Certification Mark

USCG Approved 160.064/XXXX/X
TC Approved XXXXXXX-X
ANSI/CAN/UL 12402-5

Certifying Lab Identification

Model: XXXX Style: XXXX
Lot No. XXXX

Approval conditions state that this device must be worn to be counted as equipment required by vessels meeting Transport Canada or USCG regulations.

Use:
- Fasten all closures and adjust for a snug fit.

Inspection:
- Inspect your life vest before each outing. Do not use if your life vest shows signs of weathering, damage, or rot.

Care and Storage:
- Dry thoroughly after each outing.
- Store in a dry, cool place out of direct sunlight.

Placard

A removable, one-page, two-sided placard is required to be attached to each life jacket prior to purchase to help users understand the icons and select the right device.

CHOOSE THE DEVICE YOU WILL WANT TO WEAR

SIZE & FIT
- Check label for user weight and chest size.
- Different body types float differently.
- Try your device on in the water to ensure your airway is clear.
- A good fit is secure, comfortable, and adjustable.

TRY IT ON

PERFORMANCE
- Lower level number generally offers greater mobility, comfort, and style with good flotation for most people.
- Higher level number generally offers greater flotation, turning, and stability in the water.

CONSIDER YOUR ACTIVITY & ENVIRONMENT

WATER SAFETY INFO
- In over 80% of boating fatalities the person was not wearing flotation.
- Most of these are sudden falls overboard or capsize of a small boat.
- The first moments in the water are critical, even for experienced swimmers.
- Cold water shock causes involuntary gasping, loss of muscle control and swim failure.
- Long term immersion in cold water causes hypothermia and requires thermal protection and flotation in the HELP position to conserve energy.

FLOTATION DEVICES SAVE LIVES

DESIGN TYPES
- INHERENT – built-in flotation (always buoyant).
- INFLATABLE – activated gas canister inflates chamber(s) (no buoyancy until time of inflation, requires canister replacement, may be manual, may require secondary action to don).
- HYBRID – combination of flotation and inflation (some immediate buoyancy and supplemental when inflated, may require canister replacement).
- SPECIAL PURPOSE – your activity may require special features (safety color, harness, straps, etc.) and accessories (whistle, lights, reflectors, etc.) for certain conditions.

YOUR DEVICE ONLY WORKS WHEN WORN

MAINTENANCE
- Over time, exposure to sun, salt, fuel, and mildew can damage device.
- Allow to air dry. Inspect and test regularly.
- Inflatables require replacement rearming, repacking and regular servicing.

READ, SAVE AND FOLLOW INSTRUCTIONS

WARNINGS
- Children should have adult supervision when on or near the water.
- Devices must be fastened correctly and securely.
- Some devices were not designed for certain activities or conditions such as water skiing, towed sports, personal watercraft (PWC), or whitewater paddling.

CHECK LABEL FOR LIMITATIONS OF USE

APPROVAL
- Some devices are approved only when worn.
- Check federal, state/provincial and local requirements for carriage, use and wear.

☑ US Coast Guard ☑ Transport Canada

WEAR IT

For more info on the right choices for yourself, your family and friends.

Visit www.wearitlifejacket.org

Terminology

Various terms are used for wearable safety devices that provide buoyancy to keep a person afloat. Those include lifejacket, life jacket, life preserver, life vest, flotation aid, buoyancy aid, and personal flotation device (PFD). Several terms have been assigned specific definitions in various current and past standards and appear on labels. Such distinctions can be confusing to the casual user. This manual uses *life jacket* in the generic sense to indicate all such devices that have US Coast Guard approval. That is in line with Coast Guard Office of Boating Safety and National Safe Boating Council usage. What a device is called is less important than wearing it consistent with label instructions.

Coast Guard Approval

The U.S. Coast Guard authorizes agencies such as UL LLC to certify that life jackets meet standards and issues USCG approval numbers to include on the label.

Flotation devices without an approved number do not meet regulations for recreational boating and should not be used for Scouting America boating activities. Unapproved devices include snorkeling vests, aviation life preservers, swim vests, various flotation aids used for exercise or therapy, floaties, water wings and water toys.

These devices are not USCG approved as life jackets. Always check the label.

Condition

U.S. Coast Guard regulations require life jackets to be in serviceable condition. The label must be legible. Even if the label has a clear approval number, the life jacket must not exhibit deterioration that could diminish performance. Sun and water exposure can weaken life jacket materials with extended use. Leaders should check life jackets used by Scouts for rips, tears, open seams, and broken fasteners. There should be no signs of waterlogging, mildew odor, shrinkage, or clumping of the buoyant material. Life jackets that are not in good shape should be destroyed to prevent use.

Destroy life jackets that are not in serviceable condition.

Performance Classification

In 2008, the U.S. Coast Guard (USCG) and Transport Canada, in cooperation with life jacket manufacturers, began harmonizing their standards with international standards. The USCG approved Level 70 buoyancy aids in 2018 and Level 100 devices in 2021. As of late 2024, many of the life jackets available for purchase both in retail outlets and online have labels and placards based on the new standards. However, the harmonization is still a work in progress. Some newly made life jackets still use the old classification. Therefore, a review of both classification systems is useful. Appropriate activities for the different ratings are discussed further in following sections.

Legacy Classifications: Type System

Type I	Type II	Type III	Type V
Offshore Life Jacket • Turns most persons face-up. • Inherent buoyancy: 22 lb. (~ 100 N) • Inflated buoyancy: 34 lb. (~ 150 N) • Reflectors 	**Near Shore Buoyant Vest** • Turns most persons face-up • Inherent buoyancy: 15.5 lb. (~ 70 N) • Inflated buoyancy: 24 lb. (~110 N) 	**Flotation Aid** • May hold but not turn person face-up • Inherent buoyancy: 15.5 lb. (~ 70 N) • Inflated buoyancy: 22.5 lb (~ 100 N) 	**Special Use** • Turning ability varies • Buoyancy varies: 15.5 to 34 lb. 

lb. = pounds, N = Newtons. Inflatables were Type V devices equivalent to Type I, II, or III with the listed buoyancy, but only when worn and for persons 16 and older. Type IV throwable devices omitted since they do not qualify as required wearable devices. Some Type I, Type II, and Type V devices are still sold under the legacy system.

Classifications: Level System

Level 150	Level 100	Level 70	Level 50
 • Turns most persons face-up. • Buoyancy:150 Newtons 	 • Turns most persons face-up • Buoyancy:100 Newtons  Australian Example	 • Turning ability varies • Buoyancy: 70 Newtons 	 Recently approved - check label  Australian Example

Legacy Type II & III devices in retail outlets have the new Level 70 labels and placards. As of early 2025, other Levels available for purchase are difficult to find since some were only recently approved. Always check the labels.

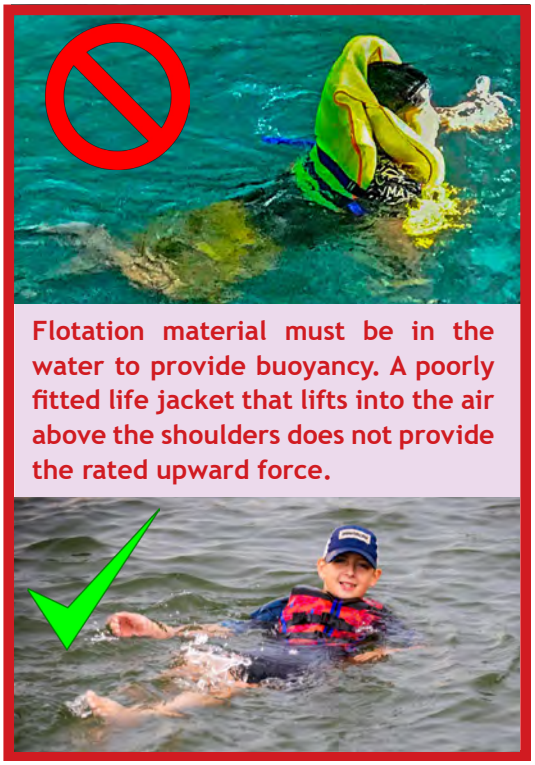
Buoyancy

Buoyancy is the upward force exerted by the water on a submerged object and depends on the volume of the displaced water. If the weight of the object in air is less than an equivalent volume of water, the object will float. A primary purpose of a life jacket is to provide enough buoyancy to hold a person's mouth out of the water without the person needing to tread water, particularly if the person is injured.

Most people can float somewhat without a life jacket, but will tend to sink if they lift their head free of the water. The head of an adult on average weighs around 10 pounds, so that sets an initial target for a life jacket's buoyancy. Adding a safety factor to allow for differences in human density and the submerged weight of clothes, and then testing the results in the water, will yield buoyancy values consistent with those in USCG regulations.

A Level 70 life jacket submerged in the water will provide an upward force of 70 Newtons, which is a metric unit for force equal to 15.7 pounds. Life jackets with higher ratings will float a person higher in the water, but all are designed to safely support a person in calm water whose weight in air is within the range indicated on the label. Level 150 is appropriate for offshore applications where rescue may be delayed and large waves may be present. (Note the waves indicated on the Level 150 icon.) However, those devices tend to be bulky and may restrict motion. The lower level ratings are appropriate when rescue is nearby. (Hence the reaching hand in the icons.) They are generally more comfortable and less restrictive, particularly for vigorous activities such as paddling.

Note that the performance level ratings indicate the buoyancy for adult-sized life jackets. Level 70 devices sized for youth, children, or infants have lower buoyancy standards. That's one reason why life jackets sized for youth are not approved for adults.



Flotation material must be in the water to provide buoyancy. A poorly fitted life jacket that lifts into the air above the shoulders does not provide the rated upward force.

Turning Ability

Life jackets are also characterized by their ability to turn an incapacitated person from face-down to face-up. Life jackets designed to position the wearer for breathing are appropriate for those with developing or impaired swimming and motor skills, such as young children. Life jackets designed with a turning force typically have a flotation cushion behind the neck, but check the label to make sure. The standard icons are shown to the right below examples of approved Level 70 life jackets for children.

No Turn Turns Most

Use Limitations

Standard icons indicate activities for which specific life jackets are not appropriate. Such activities include towed sports (water skiing, wakeboarding, tubing, etc.), personal watercraft (PWC), and whitewater paddling. Typically, life jackets for those pursuits are required to have at least three closures: at least two straps encircling the body and either a third strap or zipper. Inherent buoyancy is also required.

Life jackets without exclusion icons are suitable for most recreational boating activities, including those where impact with the water is likely, such as waterskiing. The materials are strength tested. However, that does not mean that the jacket will protect the wearer from injury.

Some life jackets are designed for specific boating activities. Note that this paddling jacket does not have a whitewater exclusion icon.

Other life jacket designs are limited to less strenuous boating activities. Users, and youth group leaders, should always check the label to determine if a life jacket is suitable for the intended use.

Design Types

Life jacket standards cover four basic design types: Inherent, Inflatable, Hybrid, and Special Purpose. The first two are covered below. Hybrid, or multi-chamber designs, combine buoyant material with an inflatable chamber. They are not as widely available in the U.S. as other designs. Special Purpose designs often require training or action by the wearer and are intended for special activities under specific conditions. Life jackets designed for swift water rescue are an example. Among other features, they include a quick release harness to which a line can be attached. However, attaching a safety line to a rescuer can be extremely hazardous, particularly without proper training. Anyone considering a Special Purpose life jacket should be knowledgable about that purpose.

Also note that the designs covered in this chapter are for recreational boating activities. Other standards apply to commercial activities and boats that carry passengers for hire.

Inherently Buoyant

These designs have built-in flotation that provides the rated level of buoyancy. They are meant to float a user immediately without any action required of the wearer. They come in a variety of styles and vary in price from relatively inexpensive to pricey. Only a few of many styles are shown. (The labels are descriptive: a variety of names are used for different designs.)

vest turns most

vest no turn

yoke type horse collar

paddle jacket

Many inherently buoyant designs have special features, such as pockets for use while paddling, fishing, or hunting. Straps may fasten in front, or at the sides. Jackets sized for infants and children may have crotch straps and lift handles. Float coats provide additional protection from the environment and are sometimes used by sailors and waterfowl hunters in cold weather.

high-back paddle jacket

white water rafting jacket

flotation coat

Yoke type life jackets, also known as key-holes or horse collars, are available in child to adult sizes, and are designed to turn most users face-up. They are not approved for tow sports or personal watercraft. They are typically slightly less expensive than economical Level 70 designs that do not have those use restrictions. They may be less secure, less comfortable, and more motion restrictive than other designs. Their use is acceptable for Scouting activities afloat, but other inherently buoyant designs are often preferred, or required. Some uninformed users may place the single strap around their waist with the jacket inside out, which is inappropriate.

Inflatables

Inflatable designs do not provide buoyancy until chambers are filled from an attached CO_2 cartridge. Options are rated at various buoyancy levels and turning abilities. Auto inflatables are activated automatically upon submersion. Manual inflatables require the wearer to pull a cord. Both types typically have an oral inflation tube to add air.

Inflatable designs are compact and seldom impede boating activities. However, they require regular maintenance, repacking after inflation, and often cost more than similarly rated designs with inherent buoyancy. They must be worn to meet Coast Guard approval. They are not recommended for youth under 16 years of age and are not recommended for poor swimmers. They are not approved for tow sports, whitewater paddling, or personal watercraft. Those restrictions limit their use for many Scouting activities afloat.

This design is worn over the shoulders and is correctly positioned upon activation. In auto-inflate mode, it takes two seconds to activate and another two seconds to fill completely. It uses a 24 gram CO_2 cartridge.

This belt design is worn around the waist with the pack in front. The wearer must jerk the tab to activate. After inflation, the user places the neck strap over the head, and then adjusts it. Both the neck strap and the body strap may be adjusted to float the user vertically, with the head out of the water, or horizontally on the back. The 16 gram CO_2 cylinder provides 15.5 pounds of buoyancy. The oral inflation tube may be used to increase buoyancy to 22.5 pounds.

Size

Life jackets are sized for Infants, Children, Youth, and Adults. Check the label for the appropriate ranges in weight and chest size. Sizes that are too large may rise around the head to hinder breathing, vision, and movement, or even slip off. Sizes that are too small may not provide adequate buoyancy.

Cub Scouts will typically need Child and Youth sizes. Scouts BSA likely require Youth and Adult sizes. Many teens will need Adult sizes. Leaders should ensure that proper sizes are available for everyone prior to boating activities.

Adult Chest Ranges

XS: 28-32 in	
SM: 32-36 in	Adult Universal
MD: 36-40 in	Adult Universal
LG: 40-44 in	Adult Universal
XL: 44-48 in	Adult Universal
2XL: 48-52 in	Adult Universal
3XL: 52-56 in	
4XL: 56-60 in	

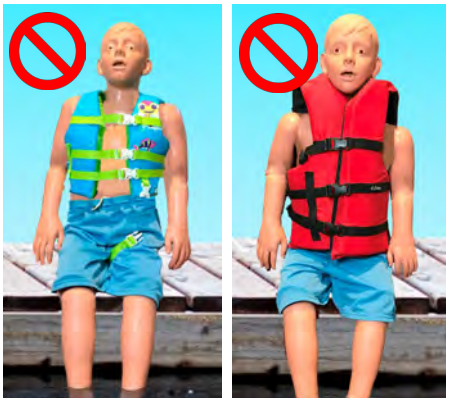
Adult Universal sized jackets are adjustable over a wide range of chest sizes. However, they will not fit everyone. Different manufacturers offer products for various body types and heights and offer special sizes such as L/XL, Tall, and Supersized. Higher end jackets designed for special purposes, such as paddling, may be offered in narrow chest size ranges. Users should try them on over clothing suitable for the activity before purchase.

Even though an Infant life jacket may be rated for any user weight under 30 lbs, the USCG and various state boating agencies caution against taking newborns under 18 lbs on board recreational boats. Available life jackets may not provide a proper fit to perform as expected.

Ideally, a life jacket that is either too small or too large should be obvious. If the jacket is difficult to get over the arms, the sides of the jacket do not meet in front, and the straps are at their furthest extent, the jacket is too small. Try a different design or the next size up.

If the jacket extends below the waist, such that it rises off the shoulders when the user is sitting, it is too long in the torso. **Do not try to force fit a large jacket to a small person by overlapping the side panels**.

Other poor fits are illustrated in the photos. Unfortunately, such sights are fairly common around boating areas. Scouting America leaders should ensure that youth under their care have properly fitted life jackets.



Fit

Life jackets that are correctly sized for individuals must still be adjusted for proper fit. After checking the size and condition of the life jacket, put it on, close any zippers, then snap and tighten the straps. The jacket should feel snug, but not tight enough to restrict breathing. If the straps are fully extended and it is difficult to close the zipper, try a larger size.

Check the fit of vest type jackets by lifting the shoulder straps. If the straps rise to ear level or the front of the jacket catches on the chin, adjust the straps and recheck. If the fit is still loose, exchange the jacket for a smaller size.

Fasten, Tighten, and Check

Although individuals can check the fit for themselves, having buddies do so for each other helps promote the buddy system. A more definitive test of life jacket fit may be done under controlled conditions in the water.

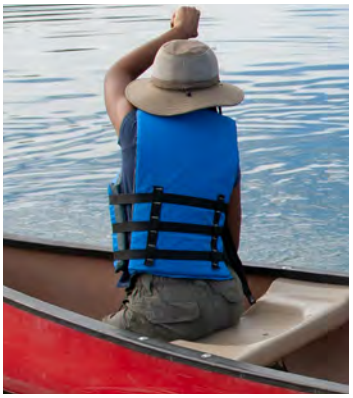
Continue to monitor the fit throughout the activity, particularly if water entry is part of the exercise. Strenuous movements may cause straps to slip. Pause as needed to adjust the fit.

Check fit by lifting at shoulders. If loose, adjust and recheck.

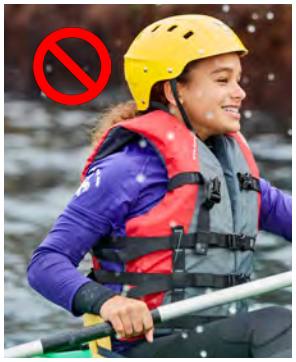
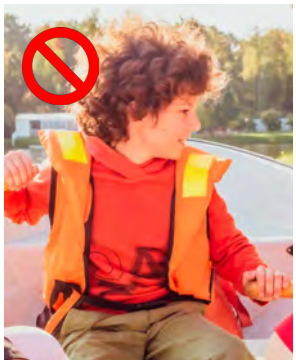
Poor fits. If observed, intervene to correct.

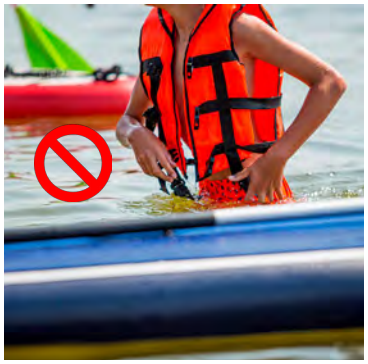
Good fits. Continue to monitor.



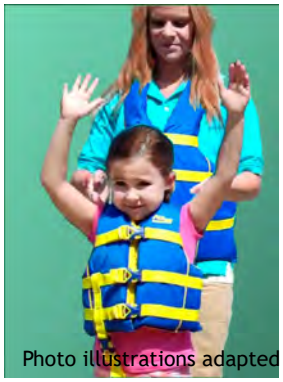
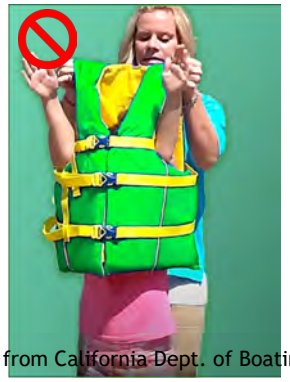



Some designs are better suited for robust activities than others. Straps held in place by a single loop on the back tend to slip off the flotation material. Such a jacket may fit well when checked initially, but may become loose after exercise. Designs with two back loops, or with the straps held in place by stitching, are less prone to straps slipping.



Participants of all ages may loosen one or more straps as an activity progresses, perhaps because the jacket feels tight or hot. Leaders should monitor life jacket fit throughout the venture and encourage buddies to do so as well.

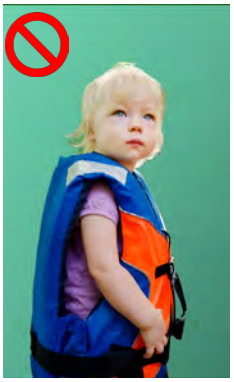



Photo illustrations adapted from California Dept. of Boating & Waterways video

Various water safety advocates advise parents to have children raise their arms when checking the fit of a life jacket. An oversize life jacket without a crotch strap will lift off over the child's head, which is a clear indication that the jacket is too large. However, a life jacket that does not lift completely off, with or without the arms raised, may still not be the proper size. A key physical indicator is that the shoulder straps should not lift to ear level. Parents should not assume their child is protected adequately if the jacket rises above the shoulders but does not lift completely off.

The adult buddies for Lion and Tiger Cub Scouts may well elect to have their child buddies lift their arms. However, buddies who are of similar height need not do so. Instructions for fitting a life jacket should always emphasize reading the label. Using the incorrect size does not meet USCG or state regulations and impairs protection.

The first step in sizing a life jacket is to check the label for the appropriate weight range.

Swimming Activities

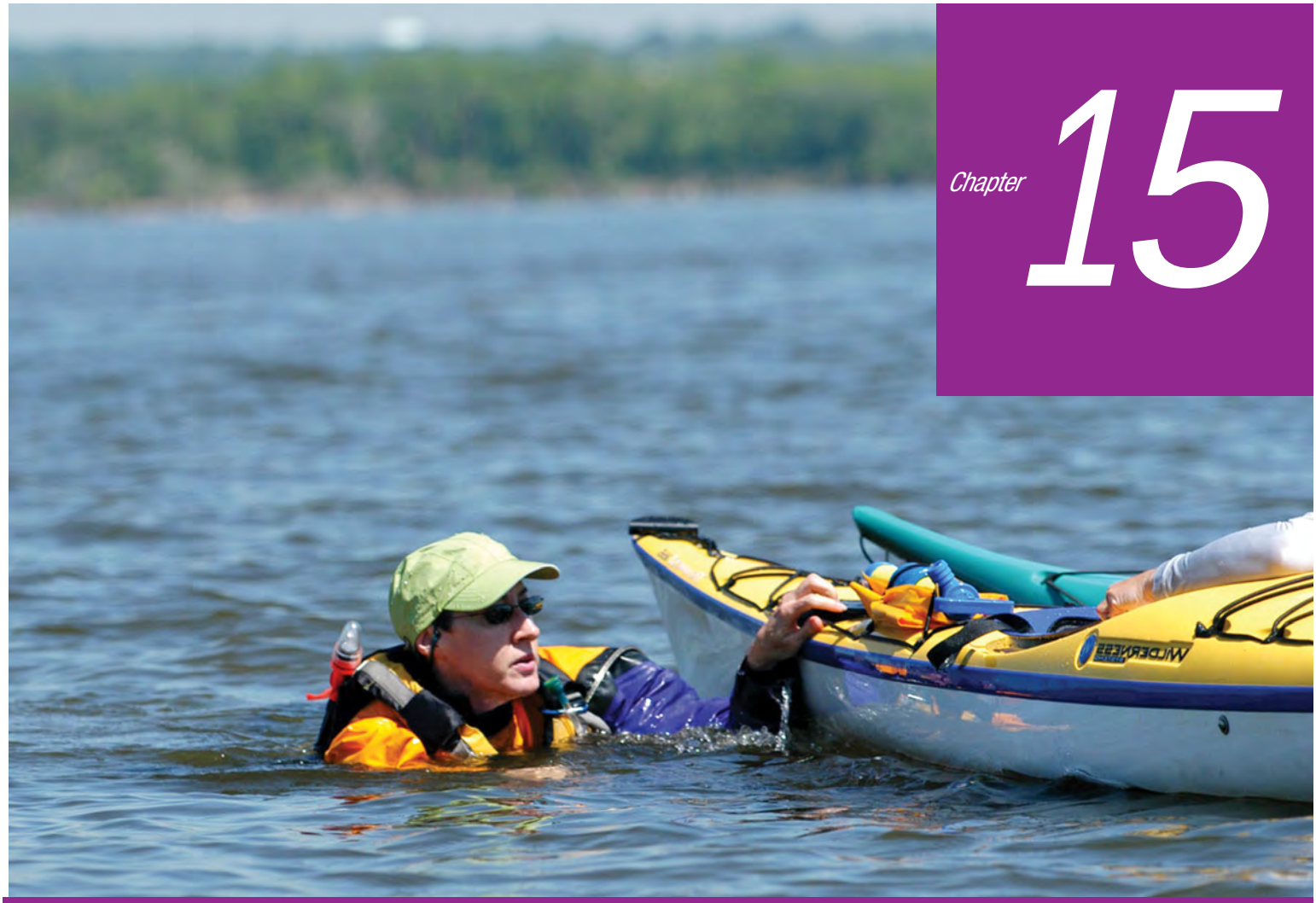
U.S. Coast Guard regulations for life jackets are specific to boating activities. Life jackets are designed to support boaters who inadvertently enter the water until they re-board a vessel or reach safety. USCG approval numbers indicate that particular designs are tested to fulfill that function. Coast Guard approval does not indicate that life jackets are particularly suited as learn-to-swim aids or that they are an appropriate substitute for swimming ability and supervision in pools or designated swimming areas. See Section II: Swimming Skills and Safety for appropriate layers of protection for swimming activities.

However, Scouting America, along with various other water safety organizations, considers USCG approved life jackets as important additional safeguards for specific swimming situations. Recall that Safe Swim Defense restricts poor swimmers to confined shallow water, limits maximum water depths for swimmers based on water clarity, and cautions against large waves and strong currents. Safe Swim Defense allows the adult leader supervising the activity to determine if life jackets provide an adequate additional safeguard in otherwise questionable situations. For example, swimming from an anchored boat in water depths where designated response personnel would have difficulty recovering a submerged drowning person. Likewise, Scouting America's Aquatics Play Structure Policy and guidance requires life jacket use by swimmers using Blobs, Icebergs, and other such inflated devices. Life jackets approved for PWC, waterskiing, or similar boating activities are recommended when used for vigorous swimming events.

Training

The first experience anyone has using a life jacket for support should not be in an emergency. Ideally, youth will be introduced to selecting, fitting, and wearing a life jacket in the water during learn-to-swim programs. Cub Scouts are introduced to life jackets in various elective adventures. Lions and Tigers (K and 1st grade with adult partners) are taught how to put on and fit a life jacket. Bears (3rd grade) who are swimmers are taught how to fit a life jacket, check their buddy's jacket, and wear one on a boat. Webelos (4th grade) and Arrow of Light (5th grade) who are swimmers, select, fit, and wear a life jacket while boating and also swim in a life jacket.

Eight of the ten aquatics merit badges (all but Lifesaving and Motorboating) require wearing a life jacket in the water, as do the four boating special awards. Whitewater merit badge and the Whitewater Rafting Award require swimming with a life jacket in moving water.



Chapter 15

Cold-Water Survival

Be Prepared

COLD WATER CAN KILL. Water conducts heat 30 times better than air. Temperatures that are only mildly uncomfortable in air can be hazardous if your body is in the water. If your core body temperature drops just 3.5 degrees you will experience clinical hypothermia, which can be fatal. Water that is even slightly below your core body temperature, around 97 to 99 degrees Fahrenheit, can be dangerous. Your survival time depends greatly on the temperature of the water, your physical condition, and your personal preparation. In water near freezing, an unprotected swimmer may be physically impaired almost immediately and may die within a few minutes unless removed from the water and properly treated.

Cold Shock is a dangerous, sometimes fatal, condition that can result when a person is suddenly immersed in cold water, such as would occur in a capsize. The sudden exposure of the head and chest to cold water typically causes an involuntary gasp for air, sudden increases in heart rate and blood pressure, and disorientation, and can possibly cause cardiac arrest.

Hypothermia results when the body can no longer maintain its normal temperature. In an attempt to protect the core (heart, lungs, and brain), the body systematically begins to shut down. Judgment and coordination are adversely affected. Eventually, death can result. One of the best indicators that someone is becoming hypothermic is if they begin to shiver uncontrollably while at rest. Being at rest is an important factor because the body heat produced by the exercise of paddling tends to temporarily mask the onset of hypothermia. Take frequent breaks where everyone stops exercising and use this time to check whether anyone is shivering.

Prevent

Plan your trip:

- Know the water temperature before you set out.
- Always wear your life jacket.
- Paddle near to shore and/or near others who can help you in the event of capsize.
- Paddle with others and ensure that all participants know the signs and symptoms of hypothermia.

Fuel your body:

- Keep your body well fueled with high-carbohydrate foods and lots of water.
- Remember, your body expends calories to maintain your core temperature as well as to provide energy to your muscles.

Insulate your body:

- Avoid cotton clothing when paddling in cool temperatures.
- Dress in layers using synthetic fabrics such as polyester fleece to prevent getting overheated or chilled from perspiration.
- Carry a waterproof jacket designed for splash and/or rain protection.
- Treat any water temperature less than 70 degrees Fahrenheit with caution. The lower the temperature, the more important it is to wear specialized insulating clothing while in the water.
- Wear a warm hat that will stay on your head in the water. A fleece-lined skullcap is ideal.
- Have spare, dry clothing and store in a sealed dry bag while on the water.
- Test your protective clothing in a controlled cold-water environment to understand the level of protection provided.

Paddle jacket with flotation device **Dry suit**

The warmth and comfort range of a dry suit can be flexible based on the clothing worn underneath it. Do not wear clothes underneath wet suits.

Watch your group:

- Know your emotional and physical limitations. Group members need to constantly assess the behavior of others in their group. Look for changes in behavior: withdrawal, sluggishness, talking less, or a member not eating enough. These are all symptoms of fatigue and may suggest a problem that the group needs to address.

Assess

The most typical symptoms of hypothermia in general order of onset are:

1. **Shivering**
2. **Impaired judgment**
3. **Clumsiness**
4. **Loss of dexterity**
5. **Slurred speech**
6. **Inward behavior** **(withdrawal, apathy, lethargy)**
7. **Shivering stops**
8. **Muscle rigidity**
9. **Unconsciousness**
10. **Death**

Treat

Mild hypothermia

(victim shivering but coherent):

Move victim to place of warmth. Remove wet clothes; give warm, sweet drinks, no alcohol or caffeine. Keep victim warm for several hours. The "window of opportunity" is closing fast. By this time you are already well on your way to experiencing hypothermia.

(If possible, take action before this stage. You may still have time to either stop the trip or take out early. Planning for an early takeout and/or shuttle halfway pays dividends.)

Moderate hypothermia

(shivering may decrease or stop):

Victim may seem irrational with deteriorating coordination. Treat the same as above but no drinks. Victim should be kept lying down with torso, thighs, head, and neck covered with dry clothes, coats, or blankets to stop further heat loss. Seek medical attention immediately.

Severe hypothermia

(shivering may have stopped):

Victim may resist help or be semiconscious or unconscious. Removed from water, victim should be kept lying flat, on back, and immobile. Victim should be handled gently. Cover torso, thighs, head, and neck with dry covers to stop further heat loss. Monitor vital signs. Seek medical attention immediately.

Victim appears dead

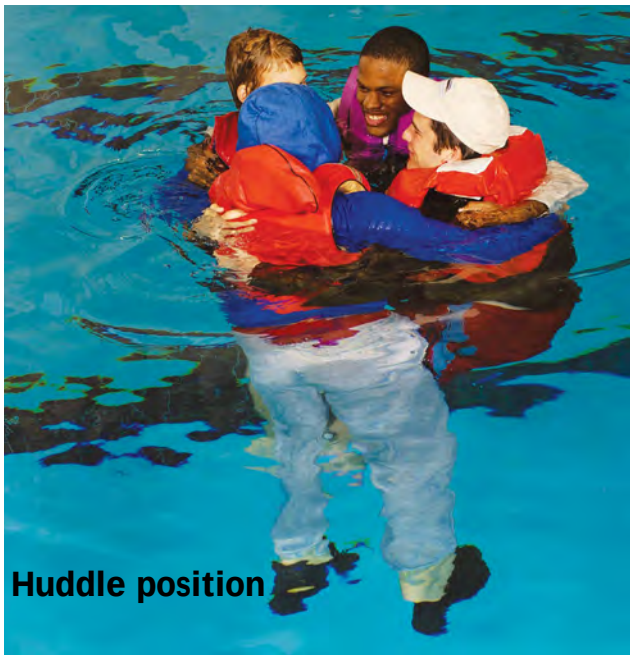
(little or no breathing, no pulse, body rigid):

Assume victim can still be revived. Look for faint pulse or breathing for two minutes. If any trace is found, do not give CPR. It can cause cardiac arrest. Medical help is imperative. If pulse and breathing are totally absent, trained personnel should start CPR.

Self-Help

A person dumped into cold water should get out as quickly as possible. If immersion occurs very close to safety, such as a shoreline, then the person should swim the short distance to get out of the water, even if that means abandoning a capsized boat and gear. However, if the distance is more than a few yards, the person should either get out of the water as much as possible on a capsized boat or assume the H.E.L.P. or huddle positions until help arrives. Help should never be far away on a properly planned float trip.

Heat Escape Lessening Posture (H.E.L.P.)



Huddle position

Swimming will generate heat through exercise, but the increased water flow caused by swimming will rapidly conduct that heat away. Even a good swimmer will not be able to swim very far in cold water. Also, heat loss is concentrated at the head. Therefore, floating techniques with the head in the water should not be used in cold water; e.g., facedown survival floating or floating on the back. A person's ability to sustain themselves in cold water improves greatly if he or she is wearing a life jacket before immersion.

Misleading Numbers ?

Numbers used to support recommendations can be very informative, but may be misleading when the a single value is chosen to represent a range. For example, various organizations at different times have used 50, 60, or 70 degrees to indicate an unsafe water temperature. There is no magic universal cutoff that always applies. A 1-10-1 rule for cold water has been discussed that implies a person has one minute to control breathing, ten minutes of action prior to incapacitation, and one hour before losing consciousness. However, those times may vary significantly. Another previously popular rule was that a value of 120 degrees based on adding the air and water temperature indicated when protective clothing is needed. The air temperature isn't really a significant factor in heat loss when a body is in the water.

(The above material was adapted from the cold-water survival brochure that is part of the American Canoe Association's *Paddle Safe, Paddle Smart* series. Consult www.americancanoe.org for additional information on paddle craft safety, technique, and instruction. Modifications were made in 2025 to reflect current knowledge based on information from the National Center for Cold Water Safety)

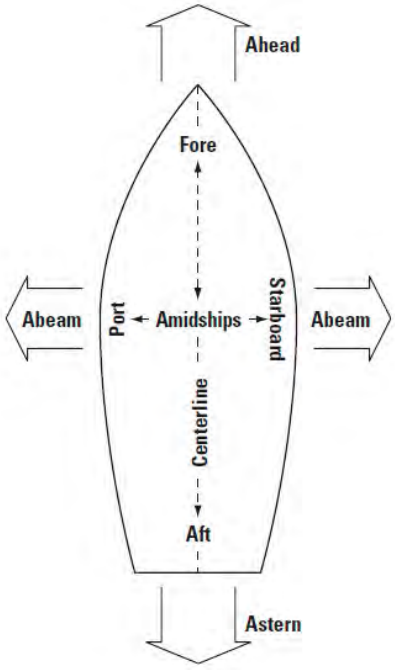
Chapter 16

Boating Basics

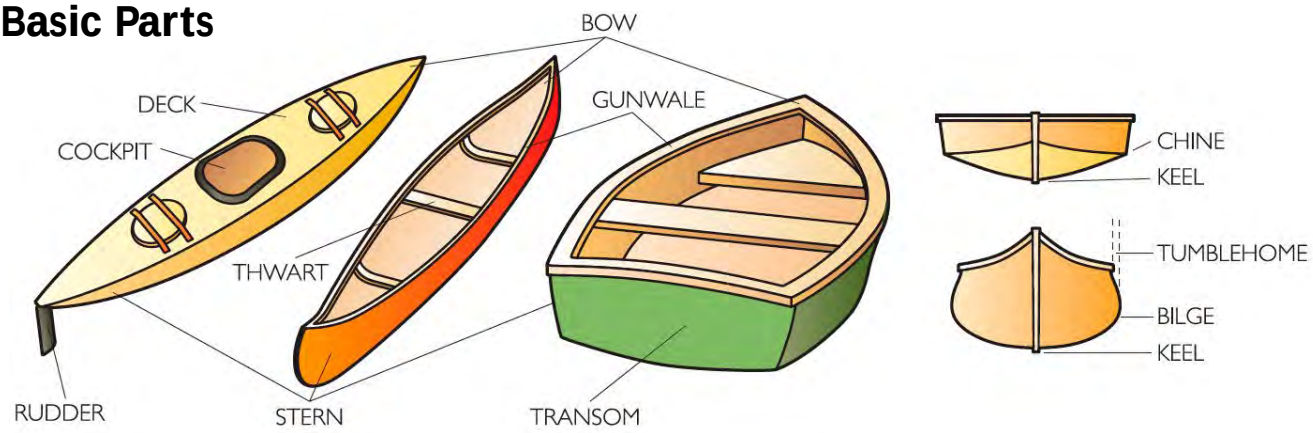
Boating Terminology

Like other specialties, boating has a special language. Familiarity with basic terms is needed for good communication. *Fore* is toward the front or the *bow; aft* is toward the back or the *stern. Starboard* is the boat's right; *port* is the boat's left. The *beam* is the maximum width of the boat, and to move *abeam* is to go sideways.

Directions

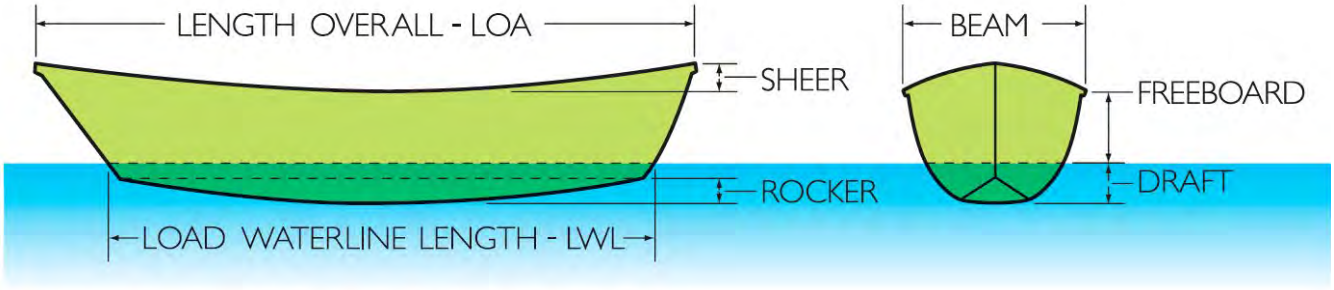


Basic Parts



The ***gunwale***, pronounced *gunnel,* is the top of the side in an open boat, or where the *deck* connects the side in a closed boat. A ***cockpit*** is an opening in a decked boat. A ***transom*** is the piece across a flat stern. A ***keel*** is a strength member running fore and aft along the center of the bottom that is often missing in molded boats. A ***chine*** is a seam or distinct change between the side and the bottom. The ***bilge*** is the curvature between side and bottom when the two are not distinct. *Bilge* can also indicate the deepest depth on the inside of the *hull,* which is the part of the boat that forms the sides and bottom. *Chines, freeboard*, *rocker, sheer, length overall (LOA), load waterline length (LWL),* and beam are all design elements that influence how the boat performs its function.

Dimensions

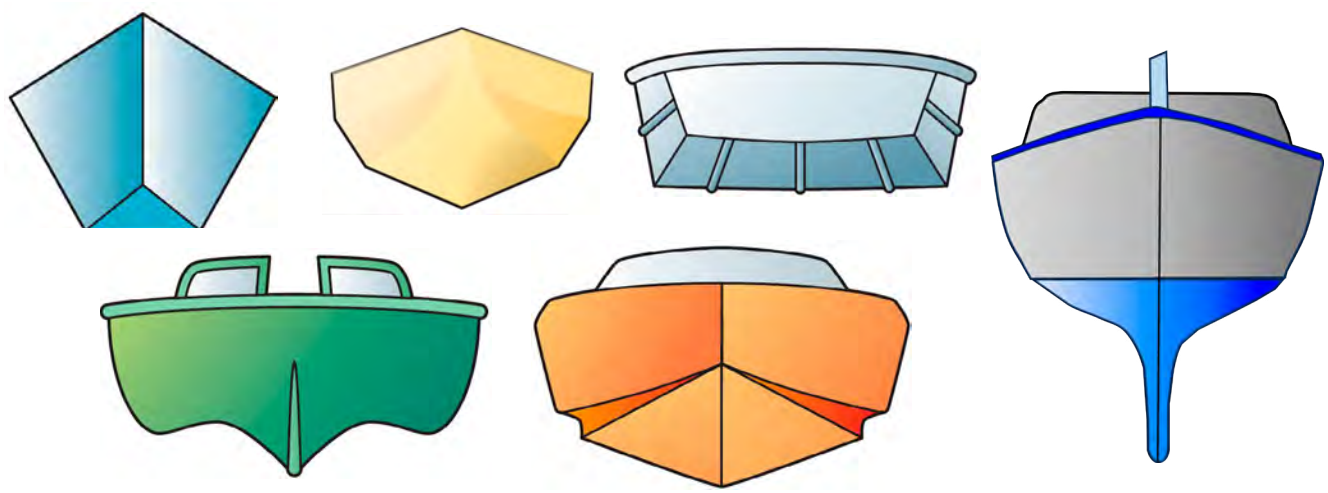


Hull Forms

At low speeds, all boats displace water, or push it aside as they move through it. As speed increases, some boats are designed to remain ***displacement hulls***. Other boats are designed to ***plane***, or skim along the surface of the water once the speed reaches a certain point.

Displacement hulls become faster as beam decreases and length increases. A touring canoe is a good example of a well-designed displacement hull. However, length affects turning ability, so whitewater canoe designs sacrifice speed and tracking in favor of maneuverability by shortening the hull and adding rocker.

Watercraft capable of generating sufficient speed can use a ***hydrofoil*** to lift the hull out of the water. The lighter the boat, the easier it is. Some human power versions are possible, but the design is mainly seen for powerboats and sailboats. Any use of a hydrofoil as a Scouting activity needs to undergo a comprehensive SAFE review.



Planing hulls tend to be flat, although many will have a shallow V shape to improve directional stability. Flat-bottomed boats tend to pound in rough water and skid around turns. Simple planing hulls often have a hard chine between the sides and bottom that is above the waterline at the bow and curves down to the corners of a flat transom. Stepped-chine boats have multiple planing surfaces to allow rapid acceleration, but don't handle rough water as well as a single-chine form. Rough water characteristics are improved by using inverted V forms at the bow grading to a flatter hull at the stern. Small planing sailboats and surfing kayaks tend to have simple hull forms, whereas a multitude of hull designs are used for small powerboats.

Boat Stability

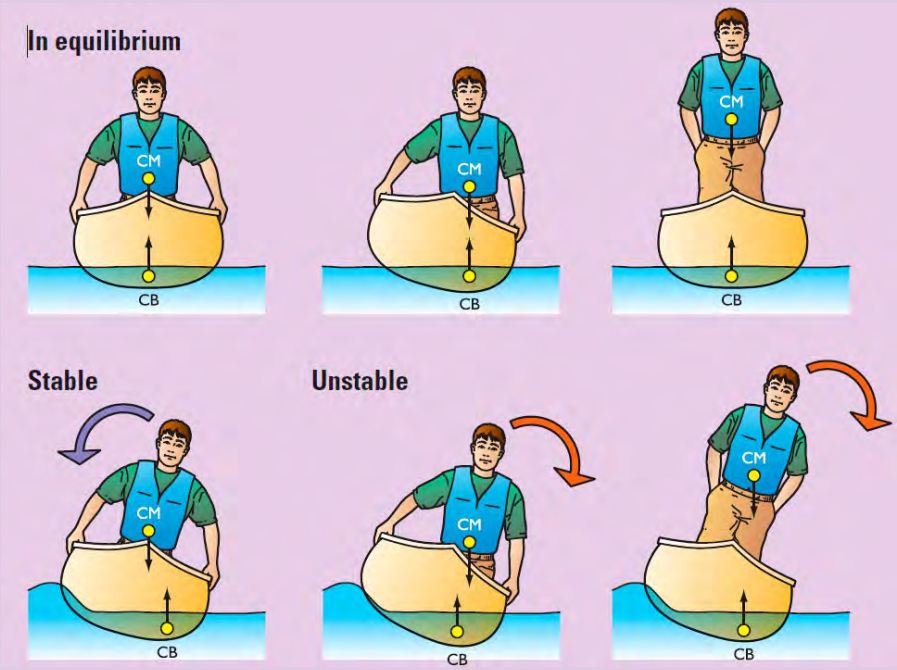
The shape of the hull also affects stability, which is an important safety consideration for small boats. Stability reflects how well a boat resists a tipping force. A boat is not very stable if a small load shift or a swell causes the boat to capsize. Stability is measured by the restoring force as a function of tilt angle, that is, how hard the boat pushes back if you push down on the side. A round log has no force to counter rotation. A racing shell has very little. A properly loaded canoe has a surprisingly large amount, and a wide, flat-bottomed johnboat has even more.

Although the width, freeboard, and cross-section shape of a hull all influence the stability of an empty boat, load distribution is the primary factor in how likely a boat is to capsize in various conditions. Two large adults, plus gear, in a 70-pound canoe can easily shift the boat's balance from stable to unstable.

A canoe is most stable when the paddlers are kneeling. Occasionally, it is useful to stand in a canoe in calm water to scout ahead, but standing needs to be done carefully. Two people standing is a recipe for trouble.

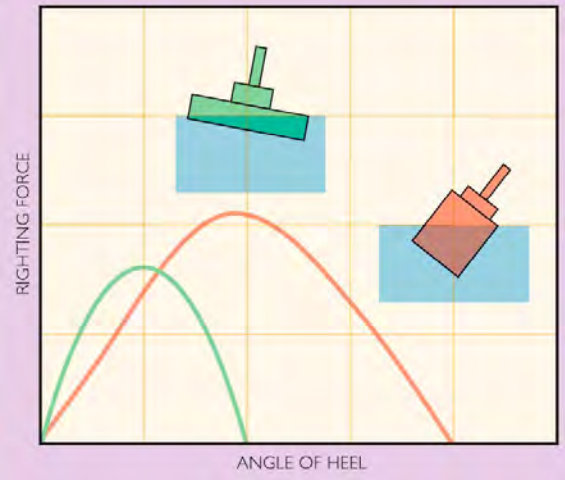
Overloading contributes to boating fatalities. Don't exceed the manufacturer's recommended load as found on the boat's capacity plate.

Technical Aside: Primary and Secondary Stability



Many canoeing and kayaking books contend that certain hull shapes have poor "primary" stability but good "secondary" stability. Similar observations are applied to sailboats and other craft. To understand the concept, a basic review of forces is needed. Gravity, acting through the center of mass of the boat, gear, and crew, pulls the boat down. Displacement, acting through the boat's center of buoyancy, pushes the boat up. The boat is in equilibrium when the forces of gravity and buoyancy are balanced and directly opposed to one another. If the boat is tilted from its equilibrium position, the boat is stable if the center of buoyancy shifts outboard of the center of mass, and unstable if the center of gravity shifts outboard of the center of buoyancy, as shown in the figures.

The size of the force acting to right a heeling boat depends on the separation of the center of mass and center of buoyancy as a function of angle. The graph shows hypothetical curves for two flat-bottomed boats, one wide with low freeboard, the other narrow with high freeboard. The first boat has a large righting moment at low angles of heel. Such a boat has good **initial** or **primary stability** and is **stiff**, that is, difficult to heel initially. However, due to the low freeboard, it can only be leaned half as far as the other boat before capsizing. The second boat has less righting moment at low angles. Such boats are **tender** and will tend to roll in waves or as cargo is shifted. However, the righting moment grows large at larger angles of heel. Such a boat is said to have good **secondary stability**. It takes a larger outside force to capsize this boat than the other, even though the first boat feels less "tippy." Note that good secondary stability does not necessarily mean that a boat is designed to be operated with a heel. If the forces on a boat are realigned to establish equilibrium at a heel, like edging a canoe or heeling a sailboat, then the righting curves in the graph would need to be recalculated.



A boat's seaworthiness depends not only on resistance to heeling forces but also on **pitch** and **yaw** characteristics; that is, how the boat reacts to longitudinal and turning forces. General hull traits, such as width, freeboard, and cross-section shape, indicate seaworthiness but aren't completely reliable. Also, ultimate stability for small boats often depends as much on load distribution, or **trim**, as on hull shape.

Rules of the Road

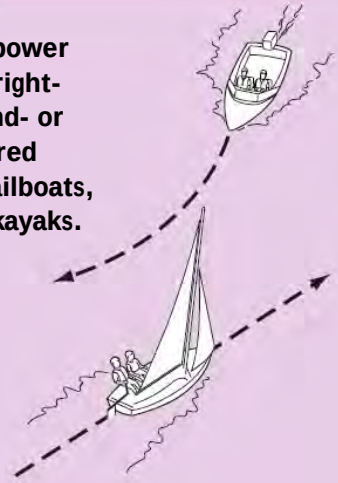
Everyone operating a boat has the responsibility to avoid collisions with other craft. Therefore, the craft should always be under control, at a prudent speed, with a constant lookout.

Rules establish which boat has the "right of way" in various situations. However, not all recreational boaters understand or follow the rules, so each skipper is responsible for taking evasive actions if the other boat doesn't respond according to the rules. The following illustrations cover common situations in recreational boating. **More-maneuverable boats should give way to less-maneuverable boats.** Because the ability of sailboats to maneuver depends on the wind direction, rules for sailboat-to-sailboat interactions are more complicated. Specific requirements may vary from state to state but generally follow the rules for federal waterways. The complete rules, which differ somewhat between inland and international waters, may be obtained from the U.S. Coast Guard Office of Boating Safety: **www.uscgboating.org**.

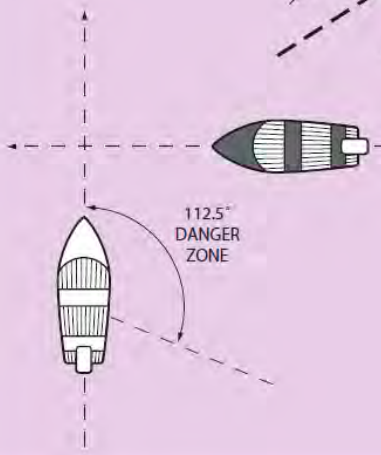
Small recreational boats should yield right-of-way and stay clear of large commercial vessels, particularly fishing boats with nets deployed or strings of barges.

All boats must proceed at low speed in the vicinity of military vessels and must not approach closer than 100 yards without permission.

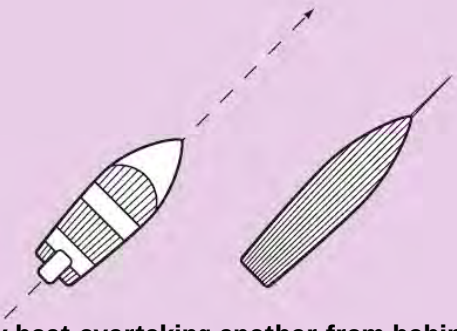
Boats under power should yield right-of-way to wind- or human-powered craft; e.g., sailboats, canoes, and kayaks.



Powerboats meeting head-on each veer to the right (starboard) so that they pass left side-to-left side (port-to-port)—the same as cars meeting on an unmarked gravel road.



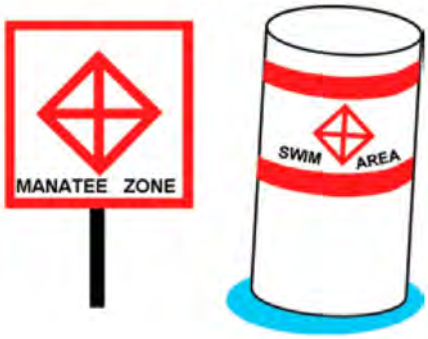
When powerboats are crossing, the boat to starboard has the right-of-way. That is, yield to a boat on your right, but proceed on course if the other boat is on your left.



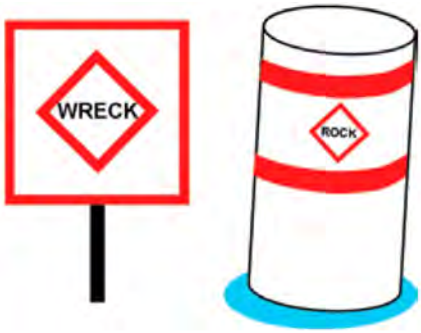
Any boat overtaking another from behind should avoid the slower boat ahead.

Signs, Markers, and Navigation Aids

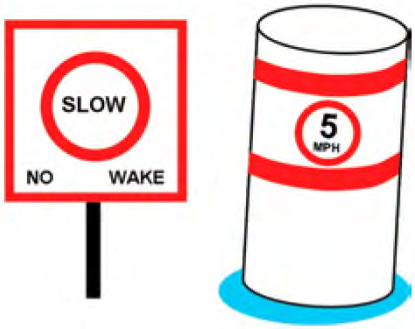
Rivers, lakes, and coastlines often have marker buoys deployed in the water to warn of danger, to mark channels through shallow water, and as general aids to navigation. These are useful to sea kayakers as well as power boaters and sailors, and warn canoeists away from dam structures and other dangers. The markers should appear on area charts. Local authorities, canoe liveries, and landowners may also post information signs on the shore.



White can buoys or signs with orange, crossed diamonds indicate areas prohibited to boaters.



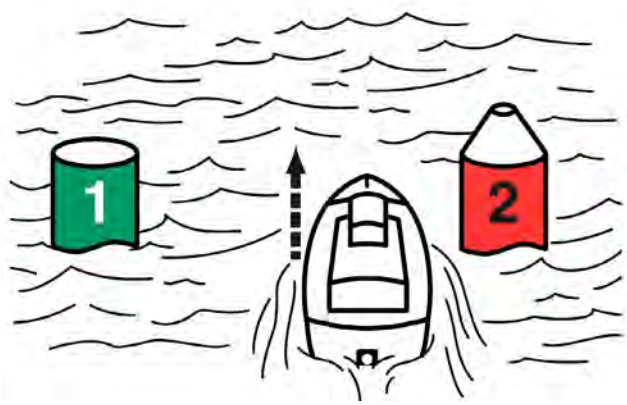
White can buoys or signs with orange diamonds indicate dangers.



White can buoys or signs with orange circles indicate controlled areas.

Be alert for informal signs on shore that provide location checks or instructions.

Stay well clear of boats or floats with dive flags indicating scuba divers or snorkelers in the water.



The general rule for channel markers is *RED RIGHT RETURNING*. When returning to shore, going upriver, or traveling south on the Intracoastal Waterway, keep red, even-numbered cones or triangular signs on your right, and green, odd-numbered cans or square signs to your left. Slow, shallow-draft boats should stay at the edges of the channel to allow passage of larger craft. Even shallow-draft boats such as kayaks may need to stay within the channel markers to avoid damage to and from coral reefs, to avoid sandbars at low tide, and to stay clear of weeds and breakwaters.

Boats and the Law

Legal requirements for boats and boaters arise from various jurisdictions, including federal, state, and local. Enforcement agencies include the U.S. Coast Guard, the Army Corps of Engineers, and park services. Safety Afloat requires you to know and follow all regulatory requirements. Check with local authorities to verify and complete the material given here. The website of the **National Association of State Boating Law Administrators, www.nasbla.org,** has links to state agencies responsible for boating laws.

Registrations

Motorized craft must be registered in the state of principal use. Requirements include display of numbers and validation stickers and onboard possession of a certificate of number whenever the boat is in use. Some states require registration and fees for all boats, including canoes, kayaks, and inflatable rafts. In a few states, registration fees may be waived for boats registered to not-for-profit groups such as Scouting America councils and chartered units. Your certificate of registration will include your boat number and how it must be displayed. Normally, plain block letters and numbers not less than 3 inches in height must be affixed to the forward part of the vessel as shown.

Accident Reporting

Boat operators are required to promptly report to local authorities any serious boating accident involving loss of life, medical treatment beyond basic first aid, or property damage exceeding $2,000. Incidents occurring during a Scouting function must also be reported to the local council.

Operator License

Some states require boat operators to be older than a minimum age and to possess a valid operator's license. Generally these requirements apply only to motorized vessels, but check with your state department of transportation or other appropriate agency. In many cases, an operator permit may be obtained by completing an online course.

Use Permits

Some lakes and rivers require boaters to obtain permits prior to use. Permit acquisition may be as simple as paying a fee on the spot to use a launching area, or as complicated as submitting an application to a national lottery a year or more in advance of a trip. Permits may specify numbers in the party, allowed campsites, and restrictions on fires and waste disposal.

Signaling Equipment

Following sections will expand on the type of equipment needed for a safe, enjoyable trip in various types of craft. However, all craft under federal jurisdiction are required to carry an audible device, such as a whistle, that can be used to signal other boats. For canoes, kayaks, and other small boats, it's a good idea for everyone to have a whistle attached to their life jacket during a float trip, even if it is not a local requirement.

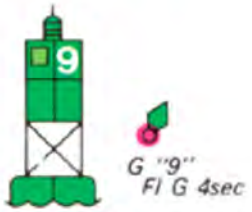
U.S. AIDS TO NAVIGATION SYSTEM

(on navigable waters except western rivers and intracoastal waterway)

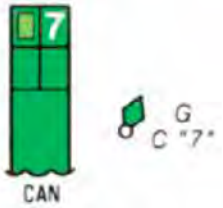
LATERAL SYSTEM AS SEEN ENTERING FROM SEAWARD

PORT SIDE (ODD-NUMBERED AIDS)

GREEN LIGHT ONLY
- FIXED
- FLASHING (2)
- FLASHING
- OCCULTING
- QUICK FLASHING
- ISO



LIGHTED BUOY



CAN

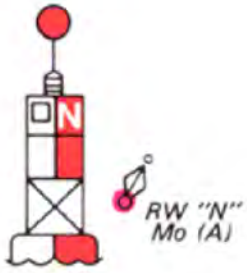
DAYMARK

SAFE WATER (NO NUMBERS–MAY BE LETTERED)

WHITE LIGHT ONLY — MORSE CODE

Mo (A)

SPHERICAL

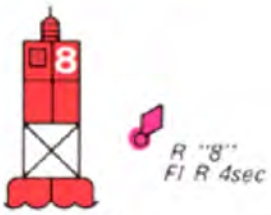


LIGHTED AND/OR SOUND

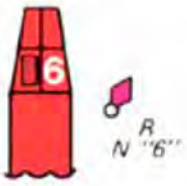
MR

STARBOARD SIDE (EVEN-NUMBERED AIDS)

RED LIGHT ONLY
- FIXED
- FLASHING (2)
- FLASHING
- OCCULTING
- QUICK FLASHING
- ISO



LIGHTED BUOY



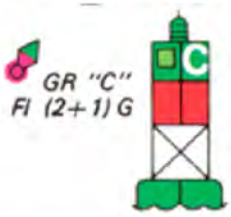
NUN

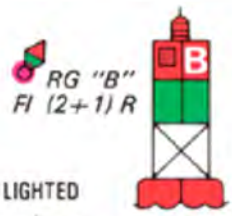
DAYMARK

PREFERRED CHANNEL (NO NUMBERS–MAY BE LETTERED)

COMPOSITE GROUP FLASHING (2 + 1)

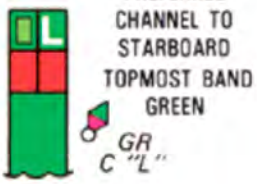
GREEN LIGHT ONLY — RED LIGHT ONLY





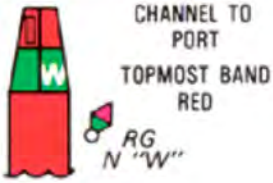
LIGHTED

PREFERRED CHANNEL TO STARBOARD
TOPMOST BAND GREEN



CAN

PREFERRED CHANNEL TO PORT
TOPMOST BAND RED



NUN

Chapter 17

Kayaking Skills

Comparisons between canoes and kayaks are inevitable. Traditionally, a canoe was an open boat designed for transporting goods and people, whereas the kayak was an enclosed single-person craft used for hunting. Canoeists typically used a single-bladed paddle but occasionally adopted the double-bladed paddle usually used by the kayaker. Those classic differences persist today; the casual observer may easily confuse an enclosed competitive whitewater canoe with a kayak, except that one paddler will use a single blade and the other a double.

The skills in this chapter are appropriate whenever double paddles are used. For example, on the canoe treks at the Evangeline Area Council Atchafalaya Swamp Base in Louisiana.

Over the years, kayaking first rivaled and then surpassed canoeing in popularity. There are several reasons. An inexpensive kayak often costs much less than an inexpensive canoe, though high-end models of either are pricey. A short, decked kayak in expert hands can safely negotiate white water that would be impossible for the most experienced team in a long, open canoe. That's one reason whitewater-canoe designs have adopted kayak characteristics. On the other end of the design spectrum, a double touring kayak may not have the capacity or ease of portage of a touring canoe, but can carry sufficient supplies for a long trek. However, ease of use may be the kayak's greatest appeal to the novice boater.

The difficulty of gaining reasonable proficiency as a solo canoeist may be likened to that of learning to ride a bicycle. The first attempts are likely wobbly and may be frustrating. Practice and patience are needed before confidence is achieved. A novice in a kayak, however, may quickly find that the boat responds agreeably, somewhat akin to starting out on a bicycle with training wheels. Imperfect analogies aside, both the canoe and the kayak have their champions and both will satisfy recreational needs into the future, whether those needs are to connect with nature on a remote backwater, to find thrills on a swiftly moving river, to compete with others in endurance and skill, or simply to delight in the graceful coordination of craft, body, and thought.

Kayak Designs

Kayaks come in a wide assortment of designs intended for different paddling activities. For example, a flat-water sprint racing kayak is designed for light weight and easy tracking, whereas a whitewater slalom racer is short with pronounced rocker for easy turning.

Originally, kayaks were made of sealskins stretched over a wood and bone frame. The Inuit used them for hunting and fishing. Early recreational kayaks were made of cloth over wooden frames, and some modern **folding (2)** kayak designs still use fabric on a frame.

Typical **recreational (5)** kayaks are designed for versatility. They are of moderate length and have large cockpit openings. They are great for learning and short trips on protected waters. Most inexpensive models are made of molded polyethylene plastic, which is durable but weighs more than other construction materials. Some designs have double cockpits for tandem paddlers.

Sit-on-top (4) kayaks lack a cockpit and have seats and foot braces molded into the deck. They often are made of polyethylene and come in single and double versions. They are great for short excursions in warm waters and are good support craft for snorkeling. Expect a wet ride. Specially designed sit-on-tops are used for surfing ocean waves, which is not an activity for a novice.

Touring (1) kayaks are larger and have dry storage capacity for camping gear. They are long, often up to 17 feet for single versions and close to 20 feet for tandem models. Even though long lengths with little rocker help tracking, many models are also equipped with a folding rudder. Fiberglass or Kevlar composites may be used in construction to reduce weight. Spray skirts help keep out water. These boats are also known as **sea kayaks** due to their use around ocean shorelines.

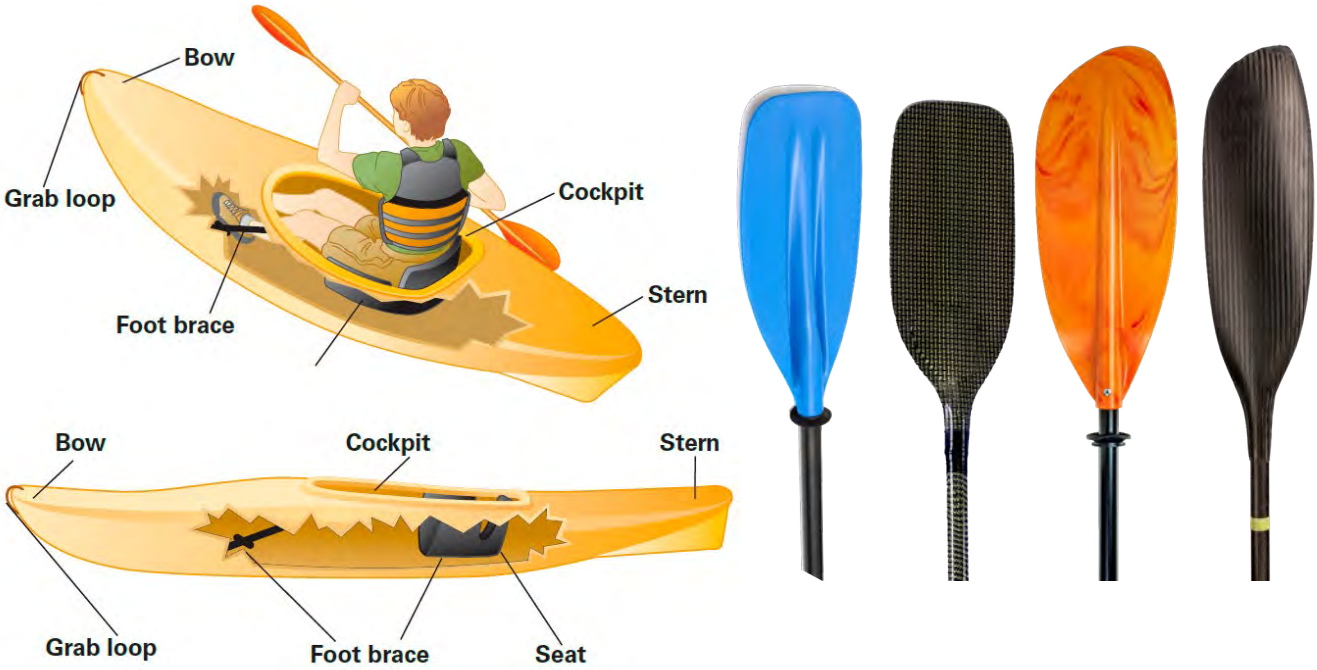
Inflatable (3) kayaks have flat-water and whitewater uses. They can be deflated for easy transport and provide a fun experience in many settings. Quality designs are both stiff and durable.



Whitewater kayaks typically have short hulls with pronounced rocker. **Creek boats**, **playboats**, and **squirt boats** have various design features such as blunt ends, multiple chines, and planing hulls depending on whether the goal is the first descent of a wild river or performing cartwheels and spins in a rodeo competition. Some designs have different tips to adapt a basic hull to different specialties.

Note: Some kayak designs come in different sizes. You should fit snugly but comfortably in a kayak with a cockpit.

Parts of the Kayak



Paddles

The blades of kayak paddles come in various designs. Large blades provide more power per stroke; smaller blades take less energy per stroke. Many blades are lightly cupped or spooned for increased water resistance over a flat blade of the same projected area. The curve is oriented to scoop water toward the stern. Some blades are asymmetrical. That is, the shape of the blade above the centerline of the shaft is different from that below. The shape is designed to balance the area, and hence the force, on the top and bottom of the blade when the paddle shaft is inserted into the water at an angle.

Many paddles have the blades set at an angle to one another from 30 to 60 degrees. The offset angle automatically feathers the blade out of the water when the blade in the water is perpendicular to the boat's centerline. Feathering reduces wind and splash resistance. Touring paddles often come in two sections that, when assembled, allow the feathering angle to be varied.

A paddle with spooned, asymmetrical blades set at an angle has top and bottom sides and right and left ends. Depending on how the blade angles are set, paddles are either **right-hand** or **left-hand controlled**. Most are set in the right-hand control position. That is, the grip of the right hand will not change during use. The wrist of the right hand is rotated to set the proper blade angle on each side of the boat. The shaft rotates freely in the left hand. Quality paddles have an oval shaft, which provides better control and comfort and helps you set the correct angle. Most paddles have straight shafts, but a few designs are bent at the grip positions to ease strain on the wrists.

Correct paddle length depends on the length of the blades, on your dimensions, those of your boat, your style of paddling, and your personal preference. Generally, whitewater paddlers use a slightly shorter paddle than touring kayakers. Paddles are normally sized in centimeters with typical lengths between 190 and 220 centimeters, or around 6½ to 7 feet. Don't have a metric ruler handy? Stand with the paddle upright with one blade touching the ground. If the end of the top blade is less than head high, the paddle is probably too short. If you can't reach the top of the blade with the fingertips of your extended arm, the paddle is probably too long. Pick a size or two in between, see how they feel in the water, and check with your instructor. Many paddles come apart for transport and are adjustable in length.

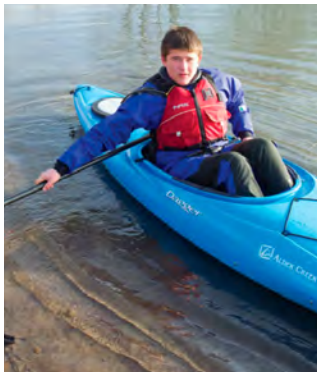
Learning to Paddle

The Scouting America Kayaking award introduces Scouts BSA, Venturers, Sea Scouts and leaders to basic flat-water kayaking skills. Check with your local council service center for approved instructors or ask the council aquatics committee to initiate a local program. The **Kayaking merit badge** teaches Scouts BSA kayaking skills and safety for calm water. Material in the merit badge pamphlet provides additional information to that given here. Aquatics Supervision **Paddle Craft Safety** training has kayaking modules for flat water and rivers.

If your council does not have a kayaking program, check with local paddling clubs for assistance. They may offer basic and advanced kayak classes using instructors affiliated with the American Canoe Association.

Boarding

After checking on land that the kayak is a good fit, place the kayak in ankle-deep water or at the edge of a low bank or dock. Use your paddle for balance by placing one end on the bank or bottom and the other end just behind the cockpit coaming (rim). Sit on the deck, not the paddle, and place one foot in the cockpit. Bring the other foot into the cockpit, then slide your legs into the boat. Reverse the process to exit. On sandy beaches, some people board in a similar manner but with the bow of the kayak in the water and the back resting on the ground.



Capsize Drill

Kayaks are sufficiently stable that an unintentional capsize in calm water should be a rare event rather than a foregone conclusion. Even so, a capsize drill early in the learning process is a useful safety exercise to remove any apprehension about an accidental capsize during stroke practice.

A capsize drill for a sit-on-top or inflatable kayak is simple: lean over, slide off, right the boat if necessary, and climb back on board. A capsize drill for a decked kayak is only a bit more complicated. After you roll over, if you don't automatically fall clear of the boat, do the following: Lean forward and grasp the coaming behind your back. Straighten your legs and push the kayak forward with your hands as you slide your feet out. You should fall out of the cockpit in a somersault. Try to maintain contact with the kayak as you bring your head above water to one side. Master this technique in a pool or calm water before you need it. Make sure the water is free of obstacles and deep enough that you don't hit the bottom when you roll over. Both your buddy and your instructor should be watching.

Balance

Kayakers "wear" their boats in the sense that power is transferred from the paddle to the boat through the torso, hips, and legs. Turns, braces, and rolls involve the hips as well as the paddle. You can experiment with hip action as part of the capsize drill. Try to tilt the kayak to the side using your hips, not your paddle. Keep your upper body upright so that your center of mass stays over the center of the boat. With practice you should be able to lean the boat almost 45 degrees to each side by cocking your hips. Flick the boat level again simply by moving your hips back to normal. When you are ready to practice capsizing, lean the boat not with your hips but by rolling your whole body to the side.

Opening Exercises

Do the following, either on land or on the water, or both, to prepare for paddling the first time. Space your hands by holding the paddle above your head horizontally with your elbows at 90-degree angles. Then hold the paddle level in front of you. The knuckles of your control hand should be aligned with the edge of the blade nearest that hand. If you are using a right-hand control paddle and you are grasping the shaft with your wrists flat, then the blade on the right will be tilted slightly forward.

Hold the shaft firmly with your control hand and rotate the paddle by bending your wrist down and rolling your knuckles back. Let the shaft rotate freely in your other hand.

Practice rotating the blades a quarter turn by flexing your wrist up and down. This exercise prepares you to angle the blade correctly on both sides of the kayak.

Next, with the paddle still level, push one blade forward and pull the other back by twisting your torso. Keep your elbows loose but don't change their angles.

A few swings back and forth should loosen your muscles sufficiently that you are able to comfortably point first one and then the other blade forward. This exercise prepares you to derive power from torso rotation rather than your arms.

The Forward Stroke

Forward motion is achieved by stroking first on one side and then on the other. Extend your lower arm toward the bow and push down to plant the blade in the water. The blade should be perpendicular to the centerline of the kayak. Draw the blade back parallel to the centerline, ending the stroke when your lower hand reaches your hip. Your upper hand should be near eye level. Don't lean forward to extend your reach. Rather, keep your back straight and rotate your torso. After the blade has left the water at the end of the stroke on one side, rotate the shaft with your control hand to set the angle for the blade on the other side as you extend that blade forward. Repeat from side to side, making slight adjustments as needed to keep the kayak headed in the desired direction. Go slowly at first to get a feel for the interaction of the boat and paddle. Also make sure the region ahead of you is clear. The kayak will respond quickly.

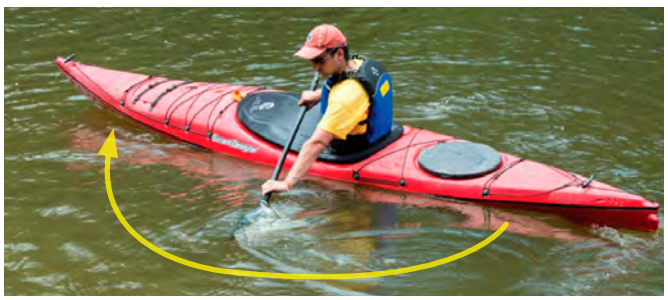
The boat is maintained on a relatively straight heading by stroking evenly on each side. A long kayak with a V shaped hull will tend to stay straight. The bow of shorter boats will tend to wobble from side to side.

Ideally, the paddle blade for the forward stroke should be kept as near the boat as possible. The further the blade is from the center line, the more the energy in the stroke tends to make the boat turn rather than go forward. Having the shaft almost vertical (when looking from the front or back) keeps the blade close and would require keeping the top hand high and across the boat. However, that is often not as comfortable or as natural as a cruising stroke with the shaft at an angle and the top hand lower.

Forward Sweep

Forward strokes are done with the blade close to the boat pushing the water to the rear; turning strokes are most efficient with the blade moved away from the boat in a half-circle. The circle for the sweep begins at the bow and turns the boat away from the paddling side. Your elbow, hand, and paddle blade will be lower on the opposite side than they are for the forward stroke. Power still comes from torso rotation. Recovery is done by feathering the power blade just above the surface. Several sweeps from one side from a stop will spin, or pivot, the boat. A sweep while under way will change the boat's direction, and can be adjusted to control the amount of the turn. A sweep on the other side will turn the boat in the opposite direction.

Reverse Sweep



You can also reverse the direction of the sweep to pivot the boat in the opposite direction without changing sides. A reverse sweep begins at the stern with the paddle shaft at a low angle to the water. Moving the blade in a forward arc turns the bow toward the paddling side.

Rudder

If you hold the blade vertical in the water at the rear of the kayak, you can use the paddle as a rudder to make minor course adjustments at the end of a forward stroke. You guide the kayak by pushing the blade toward or away from the rear of the boat. Angling the blade away from the kayak turns the bow toward the paddling side. In that case, your forward hand is slightly inboard of your back hand. Angling the blade toward the rear of the boat, with your forward hand slightly outboard of your back hand, turns the bow away from the paddling side. A rudder is only effective when the boat is moving. Deflecting water to the side creates resistance, which is translated into a course correction. The faster the boat is moving relative to the water, the quicker the response. However, a rudder also creates drag, which slows the boat. A forward sweep is generally more efficient for making turns under way.

Draw Stroke

The draw stroke moves the kayak sideways toward the paddle. Rotate your torso to face the side and reach out with your lower arm. Plant the blade in the water and pull the kayak toward it. Keep the blade almost vertical and parallel to the side of the boat. Recover with the blade in the water by twisting the blade perpendicular to the boat and slipping it back to the draw position.

Back Stroke

To stop the kayak, do a back stroke: the forward stroke in reverse. Continue to stroke backward on opposite sides to bring the kayak to a complete stop or to move it backward, also called backwatering. Don't forget to look behind you when using the back stroke.

Stroke Combinations

The few strokes described above give you enough choices for moving a kayak at will in calm water. Practice the strokes separately when first learning. Master each component sufficiently to make the kayak respond as intended. With a bit of practice, the actions caused by the strokes should begin to feel natural. After a while, you will not deliberately consider what stroke to use or worry about how to execute the stroke correctly. Instead, you will decide where you want the kayak to go and automatically direct the paddle to achieve that result.

Aiding a Capsized Paddler

As with the wet-exit capsize drill, the difficulty of helping a capsized paddler depends on the water conditions and the type of craft. A sit-on-top kayak in warm water should present few challenges.

Your first concern if your buddy boat capsizes should be for the safety of the paddler, not their equipment. If the situation is urgent, due to injury or cold water, immediately tow the person to shore rather than chase after their gear. If your rear deck is large enough, the capsize victim may be able to balance on it. If your kayak is small, have the person hold onto the rear grab loop or toggle and float near the surface to reduce drag. If your buddy has hold of thier boat and needs help getting it to shore, you can tow both the person and their kayak for short distances in calm water.

Once on shore, you can empty the water from the swamped boat by each holding an end and rocking the upside-down boat fore and aft to allow water to drain from the cockpit. Some kayaks have plugs near the ends so the water can be drained by simply holding up one end.

Kayak-Over-Kayak Assist

In calm water, a capsized paddler can sometimes resume paddling without returning to shore. Self-rescue in a decked boat often requires a paddle float to provide stability. However, that technique is not reviewed here because Safety Afloat requires buddy boats for any excursion. If the buddy boats are also in jeopardy, because the group was remiss in not getting off the water in sufficient time to avoid worsening conditions, the simple towing techniques discussed previously should be considered. Boat-to-boat rescues are difficult in high winds and waves.

If the capsized kayak has good flotation, and is either self-bailing or has a pump, you can hold the boat upright next to yours to allow the person to climb aboard.

It may also be feasible to empty a swamped kayak before the person climbs aboard. Form a "T" with the boats and have the swimmer steady your kayak from the rear. Pull the swamped boat upside down across your foredeck, and gently rock it back and forth to drain it of water. Steady the boat next to your own, with your paddle braced across both craft, as your buddy climbs back aboard.

Additional Skills

According to Safety Afloat, all persons participating in activities afloat other than during closely supervised instruction must be trained and practiced in craft-handling skills, safety, and emergency procedures. The skills reviewed above support Kayaking award requirements and prepare Scouts for kayaking on flat water of limited extent, such as that at a camp waterfront, and for float trips on flat water provided all facets of Safety Afloat are in place. However, ocean and river trips require additional kayaking skills, such as the classic roll, for dealing with waves and moving water. Such skills are best learned under the guidance of an experienced instructor. You will also need to develop the ability to "read" the environment. An introduction to moving water is provided in Chapter 20.

stern draw

low brace

roll sequence

Chapter 18

Canoeing Skills

Canoeing Introduction

Canoeing is popular with youth served by Scouting America. Scout groups delight in canoe trips, whether for a day or a week, far away in the Canadian wilderness or on a local lake, down a distant river or on a local stream. The material in this section is tailored to the cruising canoeist, but modern canoeing takes many forms, from dragon boats with large crews, to solo whitewater slalom racers, to freestyle "ballets" set to music. Specialized canoeing has led to a variety of canoe types and paddling techniques. There is no single best boat or universal perfect stroke.

With experience, canoeists develop boat sense and automatically adjust strokes to move the boat as desired. However, it does take thought and practice to learn to paddle with ease. Many people first learn to paddle tandem, that is, two to a boat. That has both advantages and disadvantages. If buddies paddle together, it is easier to go straight and perform other maneuvers. On the other hand, if buddies independently try to adjust how the boat is moving, the learning process can be frustrating. Communication and slow deliberate strokes done in unison are keys to success.

General-purpose canoes are good for flat-water cruising, gently flowing rivers, or just messing around. Longer boats float higher, slide easily through the water, and track well. High-volume boats are good for carrying lots of gear on an extended trip. Lightweight boats are good when you need to carry the canoe across portages. Boats with little sheer and low sides offer less wind resistance; boats with raised ends take waves better.

Wood is the classic canoe building material and may be covered with canvas or fiberglass. Aluminum is lighter and more durable. Other canoes are made of synthetic fiber bonded with resin, such as fiberglass and polyester or Kevlar and epoxy. Depending on the construction, such canoes may be heaver or lighter than aluminum, while remaining rigid and durable. Other canoes are made of layered plastics. They can deform around a rock and then bounce back into shape. They are typically heavier than Kevlar and less rigid. The bottoms of some may flex, or "oil can" as they move through the water.

Down river canoes designed for cruising in flowing water are shorter than their flat-water counterparts and have more rocker. They are a bit more sluggish and don't track quite as well, but they are more responsive and turn easier. They often are made of composite plastics capable of regaining their shape after impact. Open boats without air bags, properly handled, are suitable for carrying gear through minor white water.

"Playboats" with flotation bags, pedestal seats, and thigh straps are used in heavy white water. Whitewater competitors may use decked boats resembling kayaks. See Chapter 21 for additional information on paddling in whitewater. Whitewater designs are not recommended for cruising flatwater or calm streams since their tracking ability is poor.

Learning to Paddle

First, learn to swim. Scouting America policies restrict canoe instruction to those who complete the standardized 100-yard swimmer test. Second, seek out an experienced instructor. Canoeing is a physical skill, somewhere in difficulty between kayaking and ice skating. It is possible to learn through individual study and practice, but it's much easier with someone to guide the way. The basics can be learned in a few hours, but mastery takes concentration and practice. Don't get discouraged if the canoe doesn't always react as you expect. Go slow and easy until "canoe sense" becomes ingrained.

With an accomplished paddler coaching from the stern, it is possible to learn while doing—during a flat-water trip, for example. However, it is generally better to pick up the basics in a class setting before hitting the water. Trying to learn on a trip when the wind picks up and your buddy isn't as skilled, or patient, as they should be, can be a disheartening experience. Keep canoeing fun by learning and teaching it in a proper setting.

Safety Afloat requires Scouts to have three hours of training or to demonstrate proficiency before paddling on a float trip. The ability to perform the basic skills covered in this chapter constitutes appropriate training. Adults and older youth may learn the skills by completing Scouting America's Paddle Craft Safety training. Scouts BSA who earn the Canoeing merit badge cover these skills and more. The American Canoe Association also provides good introductory training programs.

Your instructor should choose an appropriate setting and tailor the lessons to conditions. Ideally, there should be no current until you are ready to master river skills. If a sheltered cove without wind or waves cannot be found, then the lesson may need to be postponed until weather conditions improve.

Your instructor should also provide or help you choose equipment appropriate for a novice. A long, stable boat that tracks well is preferable to a slender, tippy racer or a short whitewater boat with lots of rocker. Even those who can make a 17-foot cruising canoe respond to their every whim may find their first experience in a short, whitewater playboat to be like paddling an inner tube.

Choosing a Paddle

Canoes, paddlers, and paddles come in different sizes, and much is written about how to match one with the others. When you are positioned for paddling in the canoe, holding the paddle vertically at your side, the upper end of the blade, or throat, should be just underwater; the end of the grip, depending on who you ask, should be even with your shoulder, chin, nose, or eyes. Those few inches of leeway are a matter of preference or paddling style and shouldn't affect your ability to learn. That is fortunate since the paddles at many Scout camps come in 6-inch increments. Although scoffed at by some, a useful rule is that the grip of a paddle placed on the ground should come up around your chin, nose, or eyes. If the paddle is only midway up your chest, or over your head, it probably is either too short or too long. If you find two paddles, one at eye level and one just below your chin, take them both to the canoe and test them in the water. It's probably best not to buy an expensive paddle at a custom length until you have perfected your own paddling style in your own canoe.

Paddles angled at the throat may appear broken, but are deliberately built with angles of roughly 12 to 15 degrees and are used with the blade angled forward. Many marathon racers contend that bent-shaft paddles provide better stroke efficiency and will argue that results prove their advantage. On the other hand, Olympic sprint racers are allowed to use bent-shaft paddles but don't. Since some flat-water strokes are better done with a straight shaft, and straight shafts are generally preferred for white water, it is probably best for a novice to begin with a straight shaft. Some paddles have multiple bends in the shaft for a more comfortable grip, but those aren't widely available for instruction.

Paddles are made of different materials and have different-style grips, shafts, and blades. When you're just starting out, any of the common grips will be appropriate. Avoid excessively narrow or wide blades. Ideally, the shape of the shaft at the throat should be an oval, wider front-to-back to fit your hand. A circular cross section is fine, but avoid paddles that have a shaft excessively wide from side to side. Also avoid the inexpensive, heavy, all-plastic paddles that flex during a stroke. Those are not recommended for Scout use.

Launching the Canoe

1. Use a perpendicular launch, either bow first or stern first, when the water is shallow, access is limited, or in waves. Carry the boat to the shoreline, place the paddles aboard, then lift from the center. Slide the canoe hand-over-hand into the water until it is floating free.
2. The paddler who will be at the end facing the shore steadies the canoe while squatting. The other paddler steps in the center of the canoe and moves into position by walking along the center line while bending to grasp the gunwales.
3. The first person in the boat kneels in position and steadies the canoe with the paddle braced in the water. The second person then enters along the center line. If the water is shallow, the second person may need to go past their paddling position to the middle of the canoe to allow the shoreward end to float free. They assume their paddling position after the other paddler moves the boat slightly offshore.

Use a parallel launch from a dock, at a wide beach with deep water, or into a current. Place the boat in the water broadside to the shore and load your gear. One person steadies the boat while the other gets into position by stepping carefully onto the center line of the boat. The first person in the boat then steadies the boat while the second person gets into position. In a current, carefully consider which direction to point the boat, and who enters first. Land a canoe by reversing the steps. Stop the canoe before it hits.

To avoid damage to the hull, don't enter a canoe that is bridged, that is, has one end in the water, one end on shore, and an air gap between. You may need to wade into the water to ensure that the canoe floats freely before and after you enter.

Safety Tip:

When moving around in a canoe, always maintain three points of contact: two feet and one hand, for example; or two hands and one foot, as shown in these illustrations.

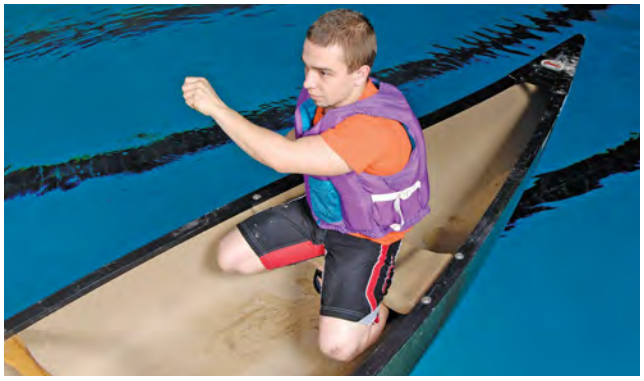
Paddling Positions

Tandem paddlers paddle on opposite sides from positions near the bow and stern. The boat should be trimmed roughly level fore and aft. Adjust the trim by moving gear and paddlers.

Kneeling in the center of the canoe, with knees apart and braced against thigh straps, provides the best stability and allows a quick shift of the paddle to the other side.

Kneeling vertically, but slightly toward the paddling side, helps with stroke execution. Weight should be against a thwart or seat edge, not on the knees. Pads help make kneeling comfortable even for long trips.

The knee opposite the paddle may be raised with the leg extended forward as an alternate relief position to kneeling with both legs.



A well-designed canoe will have seats positioned to provide comfort along with reasonable stability. In some designs, your feet may be tucked under the seat. In other designs, that might be awkward or risk entanglement.

One or both legs may also be extended forward from a seated position. Marathon racers sometime brace their feet against blocks.

Avoid sitting with lifted knees that interfere with your paddling.

Positioning the Paddle

The main points of this segment are to kneel or sit upright, keep your lower arm straight, keep the paddle shaft vertical, and use your muscles effectively.

The paddling position you take influences your stroke. A kneeing position places your shoulders higher above the water than sitting on a low seat. That in turn allows you to use a slightly longer paddle to gain more leverage. However, the position you choose may depend on how the seats are placed in the canoe. Knelling upright without support places all your weight on your knees, which is uncomfortable and does not anchor your body well for transferring the power of your stroke to the canoe. Ideally, you have the option of resting your buttocks comfortably on the edge of the seat with your knees down and your legs tucked under the seat. However, the seats in some canoes are too low for that. In that case, you are meant to sit on the seat with your legs extended forward. Ideally your feet are firmly anchored. Sitting low influences your paddle stroke and may require you to bend your lower arm. Each style has its advocates. The forward stroke described here assumes the classic kneeling position.

(If you are really low in the boat while sitting on the seat, you might consider whether a double bladed paddle will be more effective.)

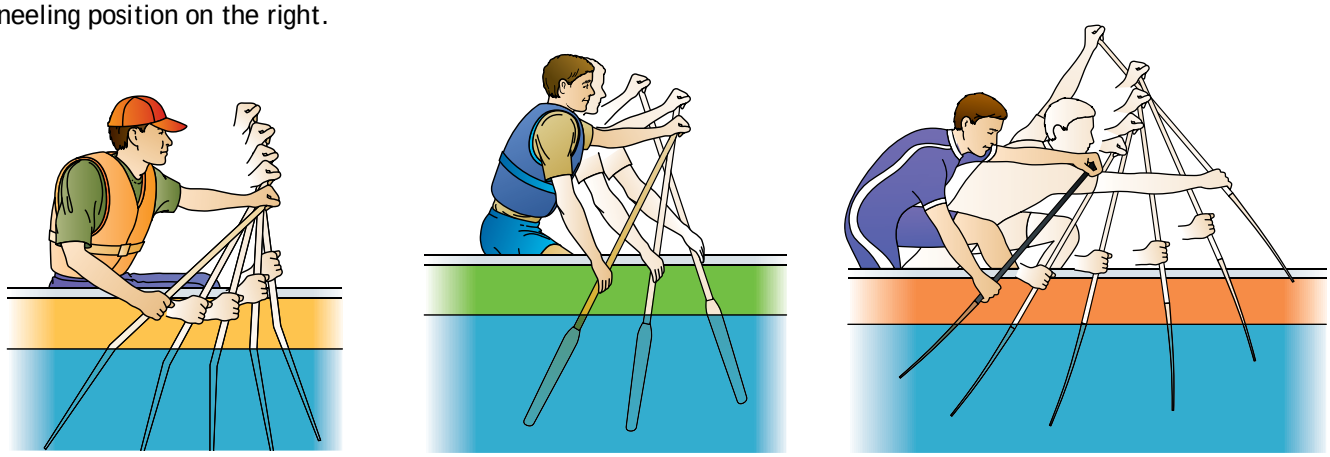
Your lower hand should hold the paddle shaft a little above the throat. Shifting your lower hand a little toward the grip may make it easier on your wrist. However, you should ideally apply force close to the blade, like holding a shovel close to the load. Your hands should be far enough apart that you can keep your lower arm reasonable straight throughout the stroke.

As the blade slices into the water for the forward stroke, your upper hand should cross over the canoe more or less in line with your opposite shoulder. That is, the shaft should be nearly vertical when viewed from the front. If your grip hand stays too much on its side of your body, you are likely adding a sweeping motion to your stroke, which means more turning and less forward power.

You also want to keep the shaft as vertical as practical when viewed from the side. You rotate your shoulder forward with your lower arm straight to begin a forward stroke. When you slice the blade into the water to “plant” it to push against the water, your grip hand should also be forward, not kept near your chin.

Forward Stroke Overview

The forward stroke provides basic propulsion in all types of canoeing. It is simple in concept, although details vary from one canoeist to another. The stroke can be divided into three phases: the **catch** phase (putting the blade into the water), the **power** phase (accelerating the canoe forward), and the **recovery** phase (removing the paddle from the water and returning to the catch position). The drawings illustrate the catch and power phases for a seated marathon racer on the left (with a bent shaft paddle), a kneeling cruiser in the middle, and a sprint racer in a high kneeling position on the right.



The recovery phase is sometimes divided into release and recovery components. Emphasis is seldom placed on how the blade is removed from the water prior to moving it forward. Some paddlers have a natural tendency to move their arms in line like a piston. At the end of the stroke, they jerk both arms up and forward. That causes at least some drag as the paddle blade is moving against the water as it is lifted. The same is true if the paddle is rotated out of the water by dropping the grip hand and lifting the shaft hand. There is an alternate, perhaps seldom mentioned since it is not conducive to winning races. That is, quit pulling hard to generate power once the blade starts to angle significantly, but continue to let it move back at boat speed until it is almost flat at the surface, then, with your lower arm still straight, begin a reverse sweep in the air. The blade is already in a feathered position and both hands in the right place. If you have a wood paddle, its buoyancy even helps a bit. (You only really lift water by keeping the blade in the water past your hip if you continue to accelerate the paddle.)

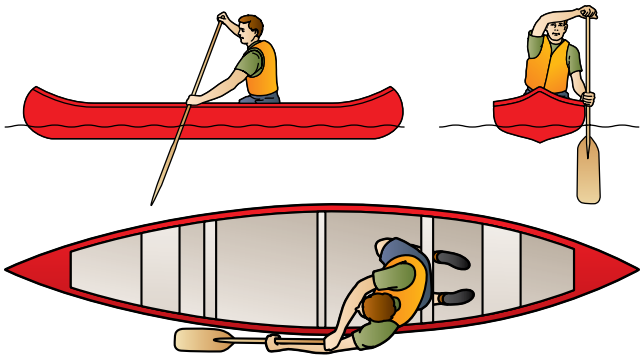
If you keep your back straight and your shoulders square, it is possible to do a forward stroke by bending your arms. However, it is more practical to use your back and shoulder muscles. Kayakers rely almost completely on torso rotation to generate power. They rotate their shoulders first forward, then back. At the other extreme, rowers in whitewater rafts "put their backs into it" by leaning both shoulders forward and then back. Some authors suggest that canoeists should mimic kayakers. However, videos of flat-water and whitewater racing canoeists reveal various combinations of both rotation and lean. A cruising canoeist need not exaggerate either.

Forward Stroke Components

When describing strokes, it is useful to use the term **onside** to refer to the side of the boat the paddle is on. **Offside** is the opposite (for a single paddler).

Just before the catch, the paddle blade is in the air over the water toward the bow. The hand on the shaft loosely grasps the paddle just above the throat with your hands a bit more than shoulder width apart. Your grip hand is just above eye level, slightly aft of the shaft hand and ideally over the onside gunwale. You may lean slightly forward, but there is no need to stretch or rotate uncomfortably.

You start the forward stroke by knifing the blade into the water by driving both hands down. Don't slap the water using only your lower arm.



During the catch, firmly grasp the paddle, but no tighter than needed. Pull back with your lower arm comfortably straight. Looking from the front, the shaft should remain vertical throughout the power phase. Pull straight back parallel with the boat's centerline rather than following the gunwale. Your grip hand will move just a bit forward and then back during the power phase. Ideally, the paddle should also be close to vertical when viewed from the side, at least as it approaches your hip. To transfer power from the paddle to the canoe, it is necessary to move the paddle backward more rapidly than the canoe is moving forward. However, think of the stroke as planting the blade in the water and pulling the canoe toward it.

Catch

To maintain your cruising speed, you only need to apply enough power to restore the momentum lost to friction and wind since your last stroke. That is easily, and most effectively, done in the short distance from the catch to or just past your hip. The power phase, either cruising or racing, is relatively short and ends once the paddle has stopped accelerating. The recovery begins in the water as you seek some way to remove the paddle without creating drag or other adverse affects.

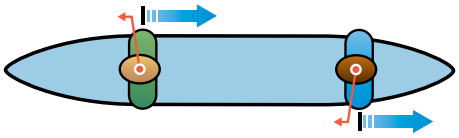
Power

Some folks let the paddle blade continue to arc upward past their hip. So long as the paddle is moving at constant speed, not jerked upward, that approach is reasonable and provides a relaxed stroke rate with time for course correction. Those in more of a hurry may slice the blade sideways out of the water or bend their lower arm to lift the paddle vertically. Still others rotate the grip to make the blade parallel with the canoe and slice upward. If you don't overanalyze the situation, your natural tendencies will probably serve you well. When cruising, return the blade to the catch position by turning, or feathering, it sideways to avoid catching wind or waves.

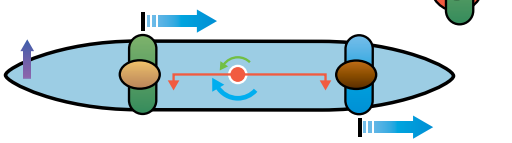
Recover

Paddling in a Straight Line

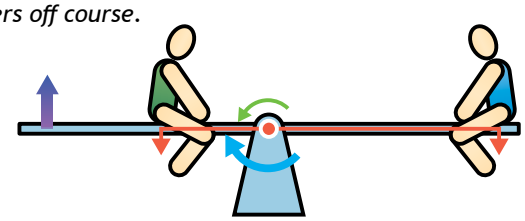
Paddling in a straight line is one of the more difficult tasks in flat-water canoeing, but it is really not that difficult if you are paddling with a savvy partner. Paddle on opposite sides, at the same time, and you are most of the way there. However, even though each paddler pulls parallel to the centerline, the offset from the centerline to the gunwale generates a slight sideways force, or torque. In most canoes, the stern paddler is farther from the boat's pivot point than the bow paddler, and the mismatch of forces eventually causes the boat to turn away from the stern paddler's side. To compensate, the bow paddler can pull harder or the stern paddler less forcefully. The stern paddler might even skip a stroke or use the paddle as a rudder. If the wind is blowing from the side, the stern paddler can paddle on the side opposite the wind. Any of those methods will work if you have patience and aren't battling a gusty headwind or a current. If you're in a hurry or a jam, you can always switch sides every few strokes. Marathon racers routinely switch sides to relieve muscle fatigue, and their boats track well. However, novices trying the **hit-and-switch** technique tend to zigzag or snake through the water. It's worth the effort to learn other techniques for maintaining a straight course. Tandem and solo sprint racers make a beeline over a kilometer or more, and anyone taking the time to switch sides during those races would lose.



Each paddler generates a rotational force, or torque, like a person sitting on a swivel chair pushing with a ski pole on one side.



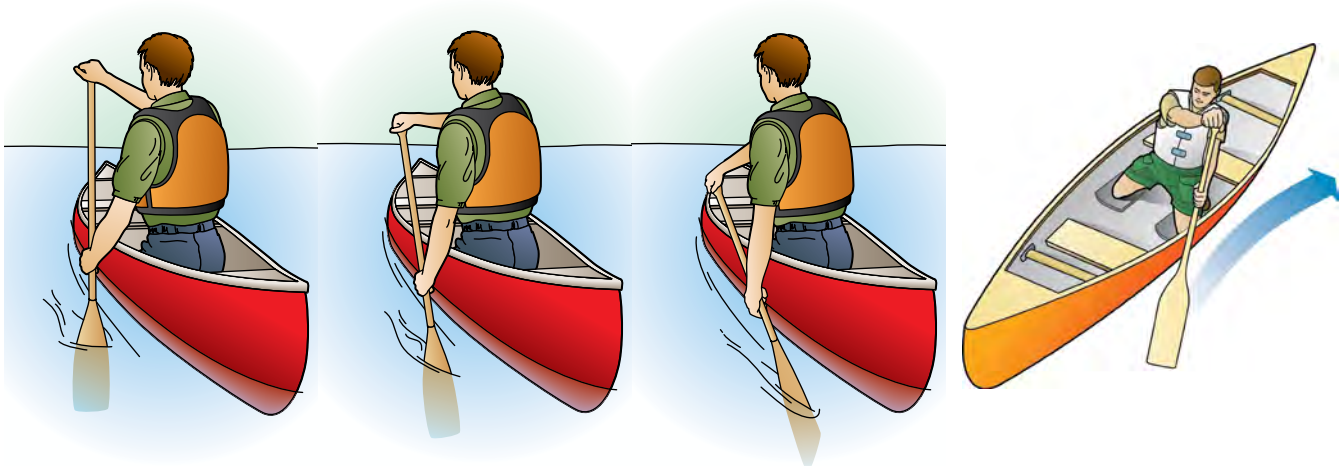
Torque depends on the distance from the center of rotation. The stern paddler typically generates more, like the person at the end of the seesaw, and the canoe veers off course.



Stern Correction Stroke

The stern paddler can always pull the bow toward their paddling side by adding a hook, pry, or reverse sweep at the end of a forward stroke. Whitewater paddlers make those combinations to forcibly turn the bow in the direction they desire. However, those techniques are more powerful than needed by a flat-water cruiser, tend to make the boat zigzag, and kill forward momentum. Only a slight modification to a cruising forward stroke is normally needed to make the necessary course correction.

The stern paddler wishing to compensate for the tendency to veer off course simply rotates the paddle during the completion of a forward power stroke by turning the thumb of the grip hand downward. The rotation begins as the blade nears the hip. Once the blade is parallel to the centerline, it is pulled past the hip and then lifted from the water. The amount of correction can be adjusted by when the rotation is started, by varying the angle the paddle is rotated, and by moving the grip hand slightly outboard of the shaft hand. The proper name for this stroke is the **pitch stroke.** If a turn is needed rather than a simple correction, the blade can be pushed outward at the end of the stroke. That makes the pitch stroke more akin to the classic **J stroke**.



There are numerous variations to the stroke just described. Any technique that lets you track straight without killing forward momentum accomplishes the task.

When you are first perfecting your stern steering stroke, concentrate on the motion of the blade rather than the direction the canoe is heading. Proceed slowly and stop just before the recovery to make sure your grip thumb is pointing down, the shaft is parallel to the canoe, and the blade is aligned fore and aft.

Once you think you have the idea, then work to keep the canoe on course. To check your mastery, try the stroke solo. Have the bow paddler turn to face aft while you demonstrate and explain the stroke.

If you try the stroke solo from a stop, you may need to take a few strokes starting with a short diagonal draw until you gain momentum. It also helps to learn in a boat that tracks well.

Draw and Pry

The draw stroke pulls the canoe toward your paddling side. Rotate your shoulders to face the onside gunwale, reach out with both arms, and plant the paddle in the water with the shaft vertical, one hand above the other, and the blade facing you. Then draw the canoe to the paddle.

If you need to make another draw, recover in the water by turning the blade perpendicular to the canoe and sliding it back out as you rotate to face the side. The thumb on your grip hand will point out.

Although both arms will be extended over the water, keep your body over the canoe to maintain stability.

The pry pushes the canoe away from your paddling side. Rotate as you would for a draw stroke, but place the paddle against the side of the canoe with the shaft vertical when viewed from the side. Your shaft hand should be just above the gunwale. Your grip hand should be slightly outboard. Use the boat as a fulcrum to lever the canoe sideways as you pull back with your grip hand. The stroke should be short and powerful—don't pull in past the center. If you need another pry, feather the blade in the water and slice it back into position.

If the canoe has straight or flared sides, the paddle will pivot on the gunwale. The contact may be further down on a boat with tumblehome (inward curve of the side above the waterline).

Communication Tip: Tandem paddlers operate as a team. For long straight passages on flat water, the bow paddler provides power while the stern paddler makes minor course corrections, but both paddlers must work together when major course changes are needed. Clear instructions are essential, particularly if the course change must be done quickly. "Port" and "starboard," as well as "onside" and "offside," have their uses, but it's hard to beat "right" and "left" to indicate direction. Canoeists almost always face forward. At other times, it may be useful to call out the name of a stroke. Either paddler may initiate action as required and should be able to rely on the other to respond appropriately.

Moving Sideways

Draws and pries are used in opposition to move the canoe sideways (abeam). Various combinations are shown below. Moving sideways may be useful from a stationary position, such as pulling away from a dock or assisting a person in distress; or while moving, for instance to avoid a submerged stump.

Sweeps

During a **sweep**, the paddle moves in an arc, or part of a circle. **Forward sweeps** with the paddle moving aft turn the canoe away from the paddling side. **Reverse sweeps** with the paddle moving forward turn the canoe toward the paddling side. In tandem canoeing, sweeps are quarter circles between the ends of the canoe and the side of the paddler.

A person in the bow begins a forward quarter sweep by rotating the onside shoulder toward the bow. The grip hand is kept low, and the shaft hand slides away from the throat as the blade is laid along the bow perpendicular to the water.

The blade is pulled away from the canoe as the torso is rotated to face forward. The blade is kept submerged near the surface. The power phase ends when the shaft becomes perpendicular to the centerline.

To recover, the blade is feathered flat over the water and arced back to the bow.

A forward quarter sweep in the stern position begins perpendicular to the canoe and arcs to the rear.

A reverse quarter sweep in the stern position begins at the stern and arcs forward until the shaft is perpendicular to the canoe.

A reverse quarter sweep in the bow position begins with the shaft perpendicular to the canoe and arcs toward the bow.

Turns and Pivots

Forward sweeps are used for gradual turns while under way. To turn away from the bow paddler's side, the bow paddler sweeps. To make the turn sharper, the stern paddler can add a pry at the end of a forward stroke.

To turn the other direction, the stern paddler sweeps. The bow paddler can assist in making a sharper turn by adding a draw at the beginning of a forward stroke.


Counterclockwise pivot

Pivots are handy when you've been exploring a narrow cove and need to turn around. Pivots are circular turns within the boat's own length made around the boat's center. They may be done in one direction with both paddlers doing a draw, or in the other direction with both paddlers doing a pry.

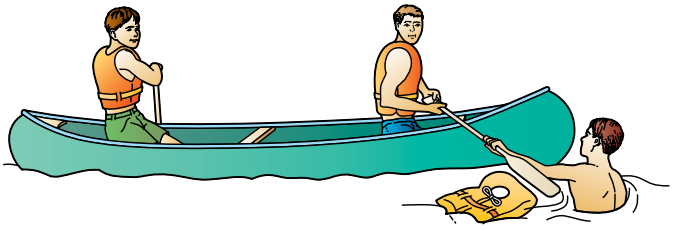
Stopping and Moving Backward

To stop a canoe, **"hold water"** with the blade vertical in the water at the end of a stroke.

To hasten the stop, or to move backward, stroke in reverse. Rotate your shoulders aft, place the blade in the water near your hips, and push the blade forward. When you can no longer keep the paddle reasonably vertical, feather it back to the starting point and repeat the stroke.

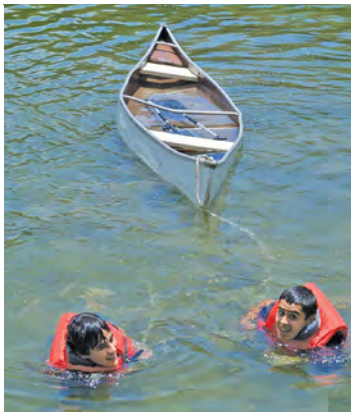
Quickly stopping a canoe that is traveling fast takes a large force to hold the paddle in place. It helps to hold the shaft against the side of the boat, but be careful about using your thumb to hold the paddle in place.

Rescue of a Distressed Swimmer



A canoe may be used as a rescue craft at a unit swim. Units on float trips may also be in a position to rescue swimmers or boaters without a life jacket who have been separated from their craft. Approach a distressed swimmer from stable paddling positions—kneeling, if possible. If you have an extra flotation device aboard, throw it to the swimmer as you approach bow first. After the subject has grasped the aid, or if there is no aid available, the bow paddler reaches out with a paddle. Once the subject grabs hold, the bow paddler swings the subject and bow together to allow the subject to grasp the end of the canoe. The bow paddler should give clear instructions throughout.

Swamped Boat Drill


Most canoeists inadvertently swamp a boat now and then. An intentional capsize helps prepare the boater for such an accident. To safely capsize a canoe, both paddlers should sit on the bottom of the boat facing the same side with their legs over the gunwale. One hand is placed on each gunwale. The partners then move their weight over the bilge and, if necessary, gently rock from side to side until water comes in over the gunwale and fills the boat. The boat should settle in the water rather than flip.

Canoes will float even when filled with water. Capsized canoeists should remain with the boat, which is more easily spotted by rescuers than are swimmers. If near the shore, the swamped canoeists may swim the boat ashore or paddle it with their hands while sitting upright on the bottom. Their buddy boat should be nearby at all times.

Canoe-Over-Canoe Recovery

If the water is calm, the shore fairly distant, and the canoes not very loaded, then the buddy boat may elect to perform a canoe-over-canoe rescue, provided the swamped canoeists are not injured or in danger of hypothermia. If the swamped canoeists are in distress, then they should either be brought aboard the rescue craft or be towed immediately to shore unless the rescuers are proficient enough to retrieve their boat quickly. If the swamped boat is fully loaded with gear, it may be more practical for the rescue boat to tow it ashore.


Come alongside the capsized canoe while instructing the people in the water to move first to the ends of their boat and then to the ends of your boat on the far side. Either transfer their gear to your boat or let it float free for later retrieval.


The bow paddler turns to face the stern and may need to move toward the center. Swing the capsized canoe at a right angle to yours. As you raise the end, turn the canoe bottom up and rest the end on your gunwale.

Ease the swamped canoe across the gunwales of your canoe, scooting it along until it is balanced. Roll the capsized canoe upright across your canoe and then slide it back onto the water on the same side you brought it from.

Hold the emptied canoe alongside yours and stabilize it as its crew climbs back aboard one at a time. Allowing the gunwale near your boat to lift slightly will make it easier for them to board.

See the *Canoeing* merit badge pamphlet for the **Parallel Canoe Rescue.**

Deepwater Entry

If you fall overboard without swamping your canoe, or need to reenter a canoe after a canoe-over-canoe recovery, then the following technique will be useful. Your partner or buddy boat can help by steadying the canoe with the gunwale down on the side you are entering.

Enter from the middle where the gunwale is lowest; push down on the gunwale with both hands to bring your hips above the water. A strong kick may help. Your partner needs to provide counterbalance.

As your hips come up, lean forward to grasp the opposite gunwale or along a thwart.

Rotate your hips to sit inside the canoe with your legs over the gunwale. Then bring your feet aboard. Move to a paddling position to steady the boat if your buddy still needs to enter.

Other procedures for deep water entry are shown in the *Canoeing* merit badge pamphlet, for example, the heel hook method.

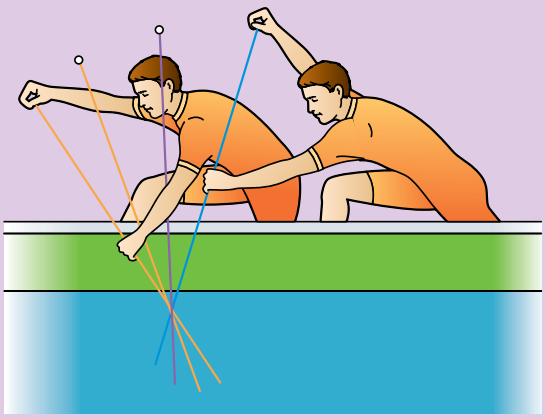
Technical Aside: Power to the Paddle

Books on canoeing often note that the canoe is pulled to the paddle rather than the paddle moved through the water. When the canoe is moving at a reasonable pace, the paddle is almost stationary in the water, but not quite. You move the canoe forward by accelerating water backward. Canoes, kayaks, swimmers, and powerboats all respond according to Newton's third law of motion: For every action, there is an equal and opposite reaction. If the paddle, hand, or propeller didn't slip at all, water would not be moved backward (the action), and there would be no momentum imparted to the canoe through the paddle (the reaction).

Consider moving a large, heavily loaded canoe from a stop using a paddle. On your first stroke, you will accelerate a mass of water backward, and the boat will respond by accelerating forward. The force on the water (mass × acceleration according to Newton's second law) imparts an opposite force of the same magnitude on the boat. However, because the boat is massive (heavy), it will accelerate only a little compared to the water moved by the paddle. During the stroke, the paddle may move backward more than the canoe moves forward.

Although a single stroke won't make the canoe move very fast, it is efficient. Some of the energy is lost to friction—that is, pushing water aside—but most of it imparts momentum to the canoe. Were it not for friction, the boat would continue gliding slowly all the way across the lake (Newton's first law). You can minimize energy loss to friction by letting the boat glide to a stop between every stroke, but your pace will be slow. Instead, take a few powerful strokes to reach the cruising speed you would like, and then cut back on the power to balance propulsion against friction. Be aware that friction increases rapidly with speed. Short, easy strokes at a uniform, relaxed pace will let you eat up the miles without overexertion.

Now consider the following diagram of paddle motion of an Olympic sprinter moving past a fixed point.



As the blade is punched into the still water, the shaft of the paddle continues to move forward at boat speed. If the paddler resisted that motion by holding the shaft fixed to the boat, tremendous drag would result—that's how you stop.

If the paddler allows the shaft to move backward relative to their body at the speed of the boat, little is accomplished. There is a bit of drag, but no energy added to the boat. To add energy, the paddler must pull back on the paddle to make it move backward faster than the canoe is moving forward. That is, the still water must be accelerated backward. To do that, the paddle must push backward relative to a point fixed in the water. The end of the blade rotates aft in the diagram, though not by much.

Once the water begins moving in response to the paddle, it must then be moved even faster to impart more energy. That is, the water must be accelerated by an accelerating paddle. Moving the paddle backward at constant speed doesn't have much effect, either positive or negative. If you aren't in a big hurry, it doesn't really hurt to allow the paddle to continue past your hip to the surface. You probably won't win a race, but neither will you noticeably pull the boat down into the water unless you jerk the blade upward. A slower recovery allows your muscles to rest between strokes and allows time for a steering stroke.

The racer is only able to accelerate the paddle over a short distance. At this point, various physical and physiological limits have been reached. All the paddler can do is add just enough energy to make up for the energy lost due to the friction of the boat moving through the water. The boat continues toward the finish line at fairly constant speed. The athlete is unable to move the paddle fast enough to make the boat go faster.

Note that the paddle blade changes angle, or rotates about a moving point, during the power phase. Ideally, the blade should be held vertically at all times, but that is not the case. Fixing the blade at an angle to the shaft, as in a bent-shaft paddle, would allow a more vertical angle at the end of the power phase, but it is not clear what impact that has on the entire stroke or how the timing of the stroke should be modified to take advantage of the bend. The hydrodynamics are extremely complicated. Rather than rely on an oversimplified analysis, be open to trying different paddle designs with various grips, shaft lengths, blade shapes, and blade angles. Then enjoy paddling with whatever paddle strikes your fancy.

Portaging

Two people can efficiently carry a canoe from a rack or a trailer a short distance to the water by grasping each end. Other techniques are useful when longer distances are involved, particularly when gear needs to be carried at the same time. The following techniques can be used to portage a canoe around a rapid or between lakes.

Chapter 19

Stand Up Paddleboarding

Stand up paddleboarding, stand up paddling, or simply SUP is a popular paddle sport. While various cultures through the ages have made limited use of long paddles while standing in canoes, modern techniques and equipment grew out of surfing. SUP then rapidly moved beyond the surf zone into flat water and rivers. Although some of the basic mechanics of using a single-bladed paddle while standing on a board are similar to those used in canoeing, stand up paddling has its own unique characteristics and devotees.

The Scouting America Stand Up Paddleboarding award introduces Scouts and Scouters to the basics of stand up paddleboarding (SUP) on calm water, including skills, equipment, self rescue, and safety precautions. Requirements for that award are found in the appendices. This chapter may be reproduced and distributed to participants to serve as a guide for that award.

SUP Equipment

Touring SUP

Whitewater SUP

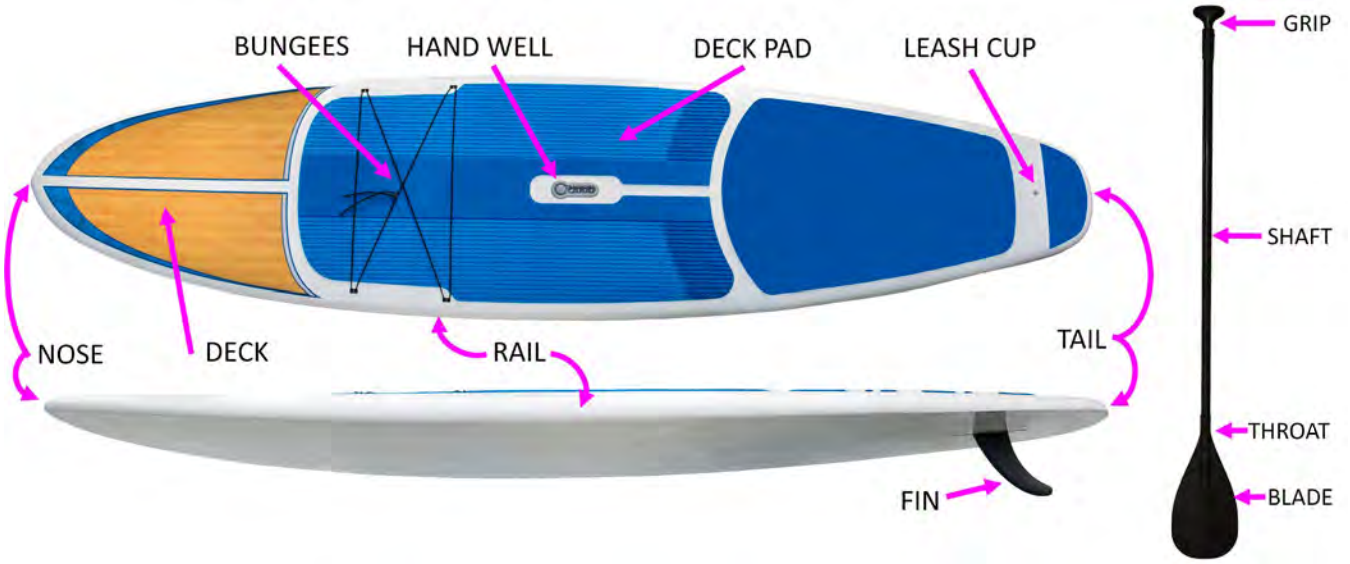
Racing SUP

Paddleboard Designs Stand up paddleboards vary based on their use, such as touring, whitewater, racing, or surfing. Some boards are highly specialized for a specific activity or water environment. Other all-around boards are suited for different activities across a range of water venues. Most boards are relatively wide compared to their thickness, have a slightly up-turned nose, and are designed to skim on top of the water. Some racing boards with narrow pointed hulls are designed to slice through the water. Some boards are rigid. Those are occasionally made of wood, but more commonly of resin-saturated fiber over a form core. There are also inflatable versions that are stiff enough for most uses and easier to transport.

Most boards are designed for a single paddler. Some longer boards are designed for two or more paddlers. A few giant SUPs can accommodate several paddlers and/or passengers.

Stability is a basic need for beginners and depends primarily on the width of the board. However, the length, thickness, and shape of the board, as well as the size of the paddler, also affect stability and ease of use. Beginners should start with a basic all-around solo design approximately 10 to 12 feet long and at least 30 inches wide.

Parts of the Board and Paddle The front of the board is called the nose, the back is the tail, the entire top is the deck, and the sides are rails. Many boards have a non-slip deck pad to help hold your feet to the board. Some boards have bungee cords to help secure gear on the deck. There should be a leash cup near the tail of the board to attach one end of the leash. Boards have one to three fins on the bottom near the tail to aid tracking (going straight). The fins may be removable. There should be handles near the center of the board or on the sides of the deck.



Paddles SUP paddles are made of various materials. Many paddles have aluminum shafts with plastic, fiberglass, or nylon blades and grips. Others have shafts made of fiberglass or carbon fiber. Lighter, more expensive models may be made entirely of carbon fiber. Blades may be rectangular or tear shaped and come in various widths. Wider blades are more efficient, that is they transfer more of your energy into moving the boat rather than the water. However, wide blades may be more tiring if you are pushing to maintain a fast pace. Most blades are angled slightly forward relative to the shaft.

Many paddles have adjustable lengths. Those are useful to accommodate users of different heights. They may also break down into shorter segments for transport. The preferred length varies somewhat by user and application. Generally, when the blade is immersed in the water and the shaft is vertical, the grip hand should be around shoulder height. Generally that means a paddle resting on the ground will be 8 to 12 inches taller than the paddler.

Some less expensive adjustable paddles with aluminum shafts may sink if the paddle is left floating in the water long enough for the shaft tube to fill with water. Quality paddles are naturally buoyant or have foam in the shaft.

Life jackets The U.S. Coast Guard considers paddleboards as vessels when they are used outside of designated swim areas or surfing zones. Therefore, federal regulations concerning life jackets, sound devices, and lights apply. Safety Afloat policies require life jackets to be worn by all participants during Scouting paddleboard activities. Comfortable jackets with positive flotation surrounding the chest and back are recommended for all participants. Inflatable life jackets may be appropriate in calm water for those 16 years of age or older. Check Chapter 13 in *Aquatics Supervision* for additional guidance.

Whistles Federal rules require all vessels to carry a sound-producing device. A whistle attached to a life jacket is appropriate for paddleboards.

Leashes A leash can be a crucial piece of equipment in numerous situations. Surfers use straight leashes to prevent losing boards when falling in waves. A leash is also useful on calm water because even a slight wind can blow your board away faster than you can swim, particularly while holding a long paddle.

For flat water, a coiled leash is appropriate since a straight leash may drag in the water and snag paddle blades or other objects. One end is attached to a fitting on the tail of the board and the other to a Velcro ankle or calf cuff.

In flowing rivers, with or without whitewater, leash use is not as straightforward since there is a possibility the leash could lead to entanglement. For river use, the leash should be attached to your life jacket with a quick-release mechanism, never to your ankle or calf. Seek specialized training before attempting SUP in moving water rivers or whitewater, and follow the advice of your instructor. When in doubt, do not wear a leash in moving or whitewater.

Leashes may also not be appropriate for multiple paddlers on a giant SUP. In any situation where the extra layer of protection provided by a leash is not utilized, then other aspects of the Safety Afloat policy such as the use of buddies, buddy boats, and supervisors skilled in emergency response will help provide a safe outing.

Clothing Shoes are needed in most environments to protect your feet when getting on and off the board. Only paddle barefoot at well-maintained, sandy beaches. Neoprene booties and wet suits are useful in cooler waters. A hat and sunglasses provide sun protection.

Additional Items For touring activities, or any SUP activity outside of a controlled instructional environment, additional equipment may need to be carried on the water. Examples include water bottles, water proof communication devices, first aid supplies, and navigation aids.

SUP Safety

Various safety items, such as leashes and life jackets, were covered in the Equipment section. Both "Life Jackets" and "Equipment" are points of the Safety Afloat policy which applies to all Scouting boating activities, including SUP. Those nine points are:

1. Qualified Supervision
2. Personal Health Review
3. Swimming Ability
4. Life Jackets
5. Buddy System
6. Skill Proficiency
7. Planning
8. Equipment
9. Discipline

Here are a few highlights:

SUPERVISION

Skilled, knowledgable leaders or instructors must directly supervise SUP Scouting activities. Those *Qualified Supervisors* are responsible for all nine points of Safety Afloat. Safety Afloat details are found in the *Guide to Safe Scouting* and Chapter 12 in *Aquatics Supervision.*

BUDDIES

Each person on the water must qualify as a *swimmer* and must have a buddy. Buddies stay aware of the other at all times and provide assistance or call for help if needed.

WATER, WEATHER, WIND,WAVES

Adjust plans to current and changing environmental conditions. Be cautious of winds blowing offshore into open water, of currents, or wave action that increases with increasing distance from the shore. Avoid areas crowded with other water craft and be aware of other users while launching and paddling. Adjust activities as needed for hot or cold air and water temperatures.

Learning to Paddle

The skills needed to stay upright and move about on a stable paddleboard in calm water are not difficult to learn. The basics are covered below. However, like kayaking, canoeing, or other boating activities, you may learn faster and better with coaching from a knowledgeable instructor.

Scout counselors for the Stand Up Paddleboarding Award are one resource. The American Canoe Association also offers SUP skill and instructor courses.

Launching

To carry the paddleboard to the water by yourself, place one arm over the rail and grab the handle or hand well in the center of the board. Bend with your knees to lift the board - do not bend with your back. Some boards have attachment points for a shoulder carry strap. If the board is too heavy, too long to balance well, or is caught by the wind, use a two person carry. One person places an arm over the nose, the other places an arm around the tail. Be careful to avoid the fin(s).

When launching from a shallow beach, wade far enough into the water so that the fins clear the bottom. The board may be placed parallel or perpendicular to shore. A parallel launch may also be used from a pier. Be sure to attach your leash before moving away, either just before or after placing the board in the water.

Getting in Position



Experienced paddlers, particularly with a wide board, can step onto the center of the board from shallow water while bracing themselves with their hands, and then rise to a standing position. (Not recommended)



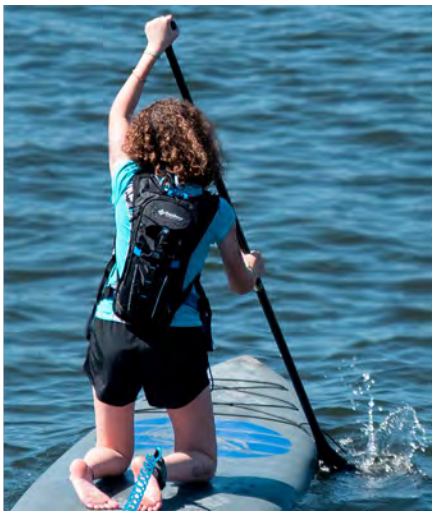
Most paddlers should first assume a kneeling position even if they are comfortable balancing on the board.

Kneeling Position

Kneeling is a good way for beginners to get a feel for the board before standing up. It is also a good safety position when stability is an issue, such as crossing waves generated by the wakes of passing motorboats, or moving away from a crowded pier. Beginners should practice moving from kneeling to standing and back.

Since the paddle is sized for standing, it is often necessary to adjust your grip. Options are an over/under grip, a double overhand grip, or a standard grip, as shown in the photos. Don't submerge the paddle blade deeper than the throat.

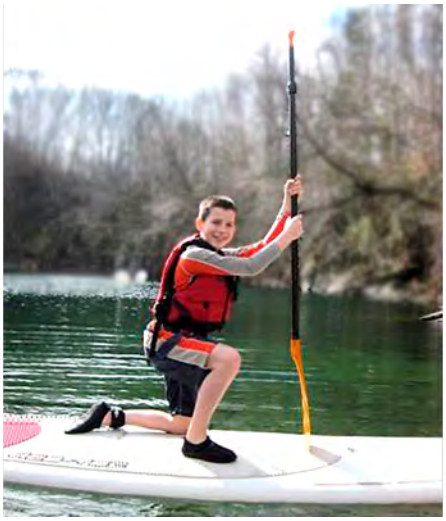




From Kneeling to Standing



One way to move from kneeling to standing is to place your paddle on the board in front of you with the blade on one side and the grip on the other. Keeping your hands on the shaft, and staying balanced on the board, slowly drag one foot up underneath your body. Next bring your other foot forward while slowly standing up.


The tripod method is another option to rise from the kneeling position. Place the blade of the paddle in the center of the board in front of you with the grip pointing toward the sky. Then, maintaining your balance in the center of the board, hold the shaft in an over/under grip and begin to slowly bring one foot forward underneath your body. You can then walk your hands up the shaft while bringing the other foot forward. After you are standing, steady yourself by placing the paddle blade in the water. Shift your weight about to learn how to use the paddle to brace yourself.

Standing & Paddle Positions for the Forward Stroke

Stand near the middle of the board with your feet about shoulder width apart. Move slightly forward and backwards and note whether the nose or tail move up or down. Find the spot where the board is in trim, that is, resting flat on the water. One foot can be slightly forward of the other. Stand straight, with your knees relaxed.

Position the paddle upright near one side of the board with the blade submerged to the throat. The paddle length should be such that the grip is around shoulder to chin height. Grasp the grip with the hand from the side opposite the blade. Slide your other hand (on the blade side) down the shaft until your arm is reasonably straight. Then move both hands until one is above the other when looking from both the front and the side.


The reason for stacking one hand above the other is to keep the paddle blade close to the boat. If you don't reach across with your grip hand, the paddle shifts from vertical to an angle, when viewed from the front. That places the blade away from the rail and will cause the board to turn.

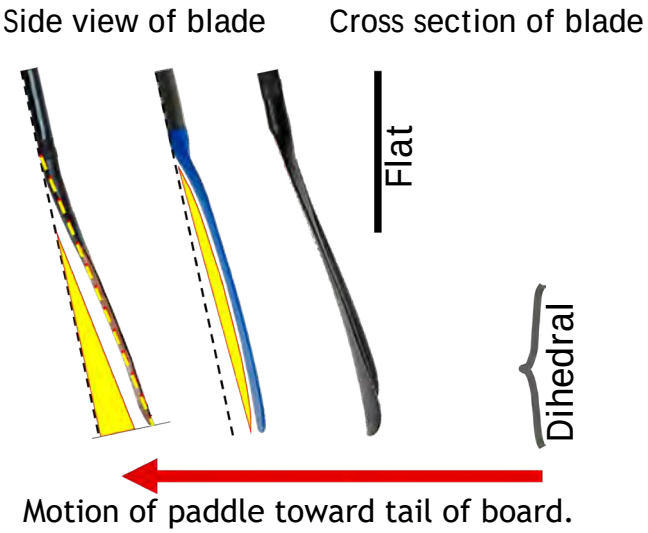
A slight bend in the elbow of your shaft hand may be more comfortable than keeping your lower arm always straight. However, you gain mechanical advantage the further your hands are separated on the shaft, so don't keep your hands too close together.

Paddle Power Face

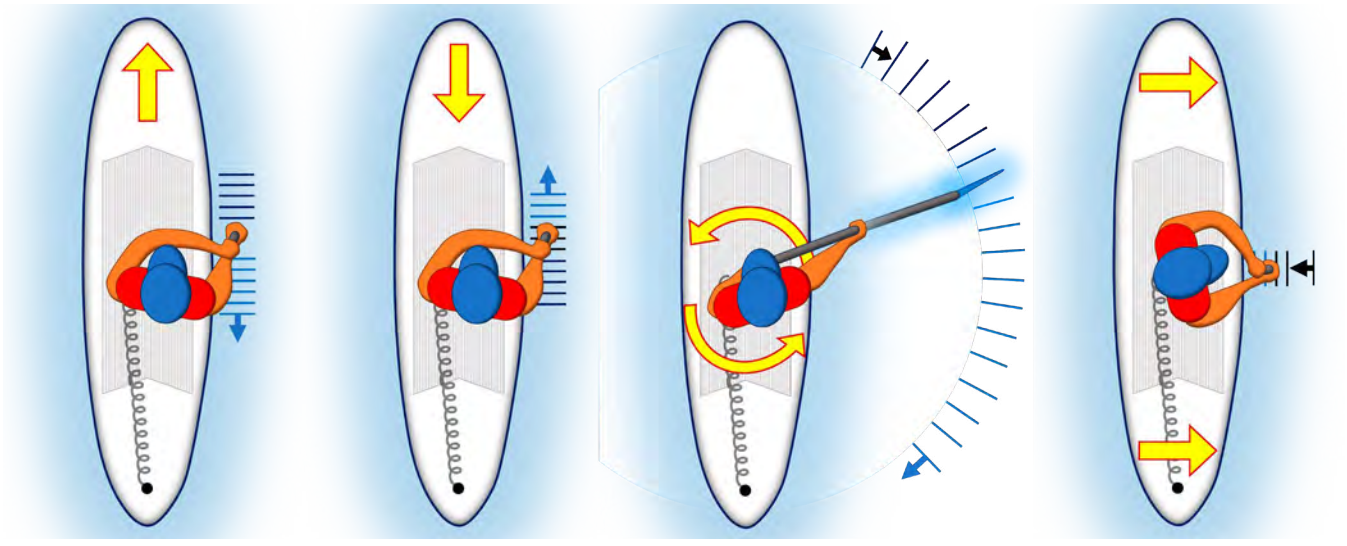
A SUP is propelled forward when the paddle blade pushes backwards against the water. That motion is most efficient when the blade is vertical, that is, perpendicular to the direction of motion. However, the blade rotates during a forward stroke so the angle changes.

Most SUP paddle blades are set at an angle to the shaft, from 7 to 15 degrees or so, when viewed from the side. The blade may also be curved vertically and/or horizontally. Conventionally, the blade is angled toward the nose of the board. The premise is that the blade should be more vertical at the end of the stroke.

Novice paddlers often intuitively turn the blade in the other direction so that the blade enters the water more vertically when the paddle is extended forward. For a flat blade, the best angle actually depends on how power is applied to the paddle.



Basic Strokes



Gaining skill in four basic strokes should provide the SUP paddler the ability to move the board where needed on calm water. That is, variations in, and combinations of, the forward, reverse, sweep, and draw strokes will move the board frontwards, backwards, and sideways, as well as turning and spinning the board.

Forward Stroke

Three key components of the forward stroke are the catch phase, the power phase, and the recovery phase. At the start of the catch phase, reach forward by rotating your shoulders and hips and extending your shaft hand. The tip of the blade should be just above the water and near the rail.

Smoothly plant the blade into the water by pushing down with your grip hand and begin pulling back at the same time. Submerge the blade to the throat.

During the power phase, the goal is to pull the board towards the paddle. Unwind your body and pull back with your shaft hand to apply a backwards force on the paddle blade.

Keep the paddle blade close to the rail and continue to apply force until the blade passes your feet.

Watch where you are headed rather than watching the paddle blade.

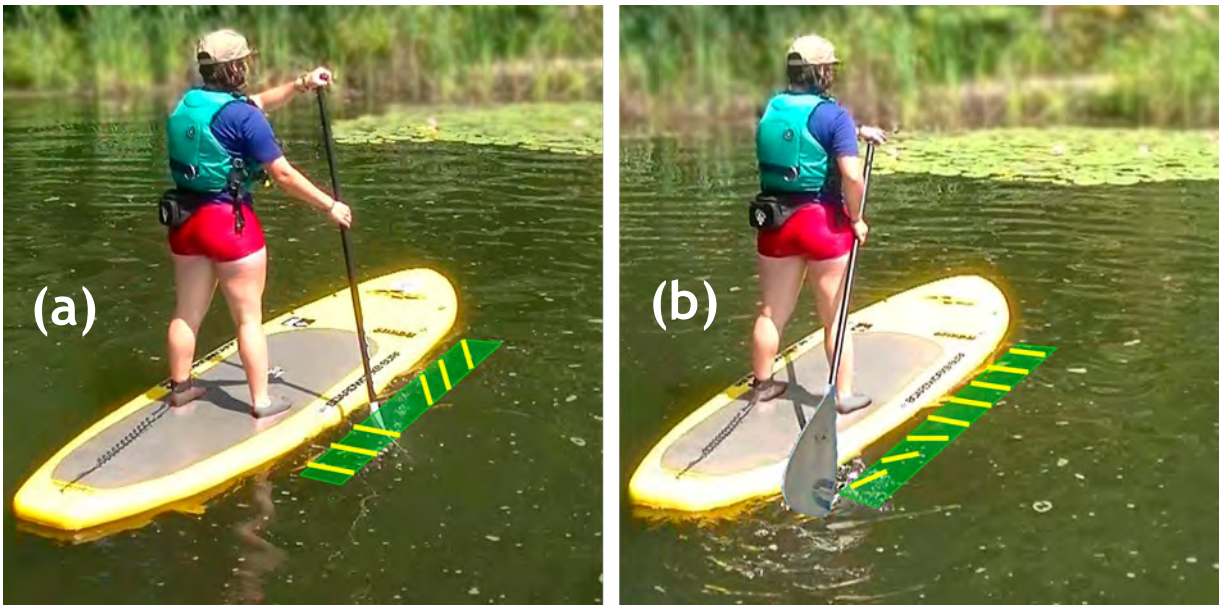
The recovery phase begins as the blade passes your feet. To avoid drag, don't lift the blade forward through the water. Instead, continue to pull the blade along the rail just fast enough to avoid slowing the board. At the same time, slice the blade sideways out of the water by lowering your grip hand across the board and lifting your shaft hand away from the rail (a). The goal is to smoothly transition the blade from the water to the air. You should not be lifting water at the end of the stroke by forcibly jerking the blade upwards while the board moves past it.

Once the blade clears the water, swing the paddle forward into the catch position as you rewind your body. (b)

Note: The three phases of the stroke are sometimes described as five phases: reach, catch, power, release, recovery. The reach positions the blade for the catch. Recovery (a) above is the release.

Going Straight

After just a few forward strokes on the same side, the board will turn away from your paddling side. One way for beginners to go reasonably straight is to switch sides every few strokes. Lift the paddle across the board and interchange your grip and shaft hands. Downsides of switching sides include taking more effort, interrupting your paddling rhythm,and the nose of the board wobbling first one way and then the other.



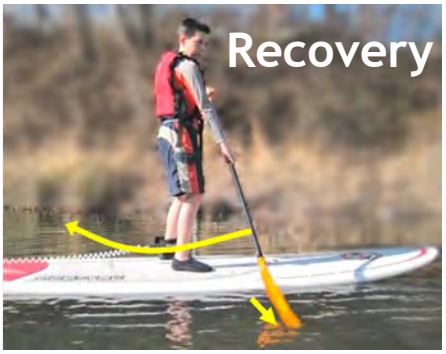
As you gain experience, you can add a gentle course correction at either the beginning (a) or end (b) of your forward stroke to avoid changing sides. Both will take a bit of practice and can be adjusted for different boards and conditions.

The first technique (a) begins with the catch. Plant the blade in the water with the power face angled toward the board and pull straight back. Force applied to angled blade for the first foot or so of the stroke will gently pull the nose toward the paddling side. The effect diminishes as the center of the board approaches the paddle, so finish the stroke with the blade perpendicular to the board.

The second technique (b) applies the correction as you start the recovery phase. Rather than immediately slicing the blade out of the water after it passes your feet, point the thumb of your grip hand down to rotate the power face of the blade away from the board. In essence, the blade serves as an extra fin and moving rudder.

Once you build speed and momentum through the water, the fins should help the board move in a straight line. If you are starting from a stop, the first procedure (a) can begin with an angled draw toward the board. The second procedure (b) may need a slight push away from the board at the end. Standing slightly toward your paddling side will lower the rail and may also help you track straight.

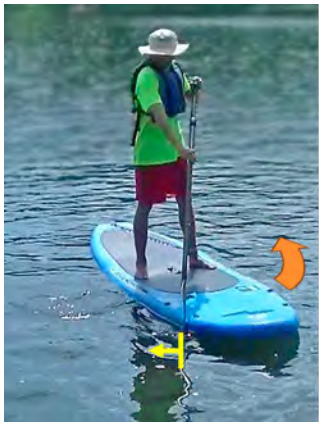
Reverse Stroke and Stopping



To stop the board or move backward, use the reverse stroke. The reverse stroke is a near opposite of the forward stroke and has the same three phases: catch, power, and recovery. Rotate your torso and hips toward your paddling side and place the paddle blade behind you in the water next to the rail, with the back face of the blade facing down. (That is, you don't need to flip the paddle.) Keeping the shaft as vertical as possible, push the blade forward with your shaft arm while unwinding your torso and hips. Keep your shaft arm reasonably straight to transfer power from your shoulder rather than bending your elbow. Once the blade is no longer vertical in the water (usually after it passes your feet), begin the recovery phase by dropping your grip hand down toward the center line of the board to slice the blade out of the water. Then swing the paddle back to the catch position. If you are using the reverse stroke to stop a fast moving board, it will likely take more than one stroke. You may find it useful to take the second stroke on the opposite side of the board to avoid turning.

Sweep Strokes and Turning

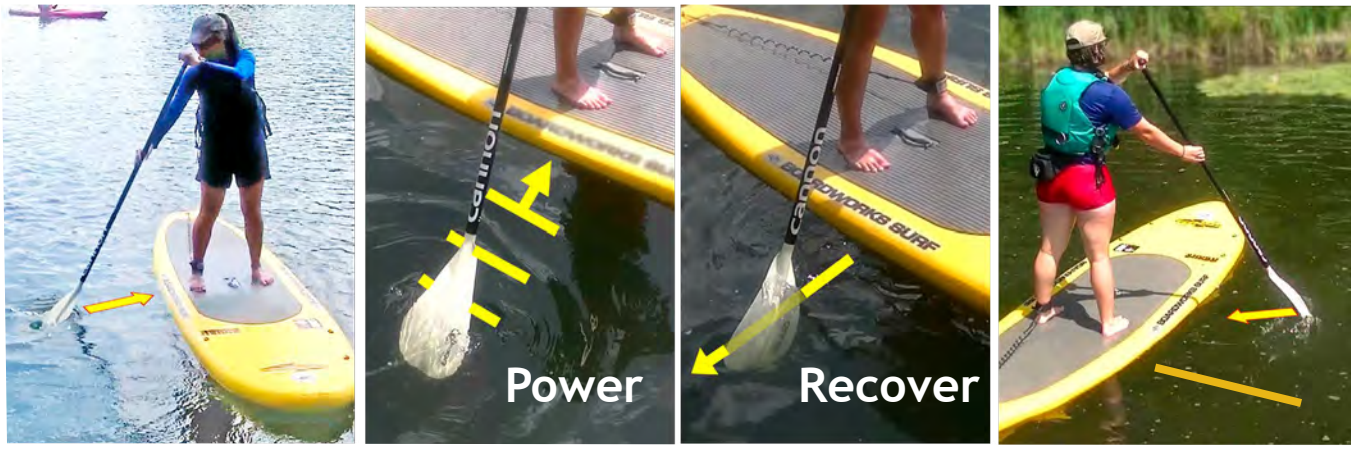
Both the forward stroke and reverse stroke can be used to change direction. To do a wide turn away from your paddling side, move the blade farther away from the rail during the power phase of the forward stroke. To turn in the other direction, simply switch sides. For a sharper turn, follow a forward stroke on one side with a reverse stroke on the opposite side. However, adding a sweep stroke to your tool kit provides more options for efficient turns and pivots.



The forward sweep turns the nose of the board away from the paddling side. If you are starting from a stop, the sweep tends to rotate the board about your standing position along with a bit of forward motion. With your knees slightly bent, rotate your torso and hips so that you place the paddle blade close to the nose of the board. Your grip hand will be lower and closer to the far rail than in the forward stroke. The thumb on your grip hand should be in a thumbs-up position to assure that the blade is in the correct orientation before beginning the power phase. Dip the blade into the water and unwind your hips and torso so that the blade makes a wide sweeping arc away from the rail. For the maximum turning effect, continue to rotate your body so that the blade exits the water close to the tail of the board. However, you can start and end the power phase of the stroke in different positions along the arc depending on how much you want the board to turn. Recover by lifting the blade from the water and doing a reverse arc in the air.

You can switch paddling sides to turn the board in the opposite direction. Alternately, you can do a reverse sweep to turn the board toward your paddling side. Other than switching direction, the technique is similar to that of the forward sweep.

Draw Stroke to Move Sideways

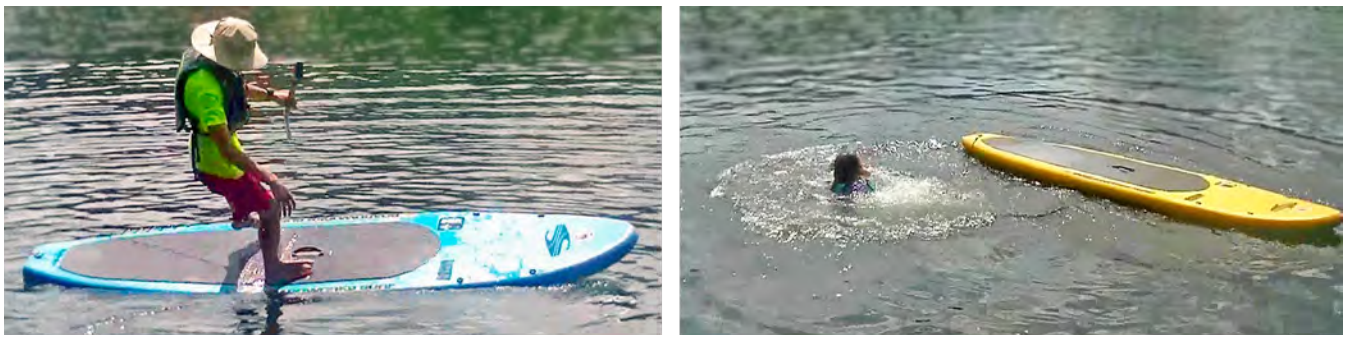


The draw stroke is used to move sideways. Begin the stroke by rotating your torso and hips until your shoulders are parallel to the center line of the board. Reach out to the side and place the blade into the water parallel to the rail. Using your torso and arms, draw the board toward the blade for the power phase.

One way to recover (not shown) is to drop your grip hand forward toward the nose, thereby slicing the blade out of the water behind you. Another way, particularly suited for another draw stroke, is to rotate your grip hand thumb out to turn the blade perpendicular to the board. Slide the blade out through the water, then turn the thumb of your grip hand to face the tail.

You can adjust how the board moves by changing the angle of the draw relative to the board's center line. The fins will also influence the lateral movement of the board.

Falls and Recovery



Try to anticipate and avoid situations that may lead to a fall. For example, if a motorboat with a large wake approaches from a distance, you may want to kneel until the waves arrive and die down. However, sooner or later you are going to fall. If you feel yourself losing balance and cannot easily recover by bracing with your paddle, try

to fall away from the board with your paddle held to the side. You do not want your elbow or chin to hit the board when falling, nor do you want your board to shoot out away from you and potentially injure someone else nearby.

When you are first learning to use a stand up paddleboard, you should practice controlled falls under safe conditions so you are prepared when it happens for real. Make sure the water is clear of hazards and deep enough that you do not strike the bottom. Your buddy boat should be close enough to provide assistance if needed, but not so close that you hit it when you fall.



To get back on the board after a fall, approach the center of the board from the side. Using a handle or hand well, pull/lift your upper torso over the rail and onto the deck. Next, slide around into the prone position. Unless there is a strong current, you can place your paddle next to the board and retrieve it after you remount since it will float. If you try to remount from the tail of the board, be very careful that you do not get cut by the fin(s) or that the board does not shoot out in front of you and injure someone.

Prone Position


If the conditions that led to your fall have not improved, or you lose your paddle, the prone portion is a back-up safety position to kneeling. You lay flat on the board and stroke with your arms. The arms can alternate, like with the crawl swimming stroke, or pull at the same time as in the breast stroke. Be wary of other boaters since it is harder for you to both see and be seen. Others in your group may be able to guide you to safety. However, if you are having difficulty, they may also have problems.

Beyond the Basics

There are additional strokes and maneuvers to learn after the basics. Stepping back when performing a sweep reduces nose drag by raising it out of the water and also shifts the pivot point above the fins. Cross strokes are sometimes useful. Racers extend their reach by leaning forward.

Other SUP Activities and Environments

As mentioned at the beginning of this chapter, there is more to SUP than the basic calm water skills covered here. Options include touring, racing, whitewater, and surfing. Seek out others with similar interests to expand your enjoyment of the sport and to improve your knowledge and skills. However, but don't push beyond the confidence zones of yourself and your colleagues. Learn critical new skills under the guidance of experienced instructors.

All SUP activities conducted during Scouting events must follow Safety Afloat policies.

Acknowledgment

Thanks to the American Canoe Association for reviewing this material, helping with the Stand Up Paddleboarding award, and providing several photos.

Chapter 20

Paddling on Flowing Water

River paddling has several allures. Drifting down a river with the current is much easier than fighting a strong headwind on a lake. Running an obstacle course over small drops and ripples adds thrills and challenges. However, safely meeting the challenges of moving water requires knowledge, skill and experience. Basic flat-water skills provide a good foundation but are not sufficient for river paddling.

This chapter provides a basic introduction to river features and the skills needed to maneuver in a current without rapids. Whitewater features are covered in the next chapter. A joint American Canoe Association and Scouting America video provides additional information on both. That video may be accessed via the digital link or the QR code.

Chapter 7 on Swimming Locations also reviews basic river features.

Rivers and Rapids Video

River Basics

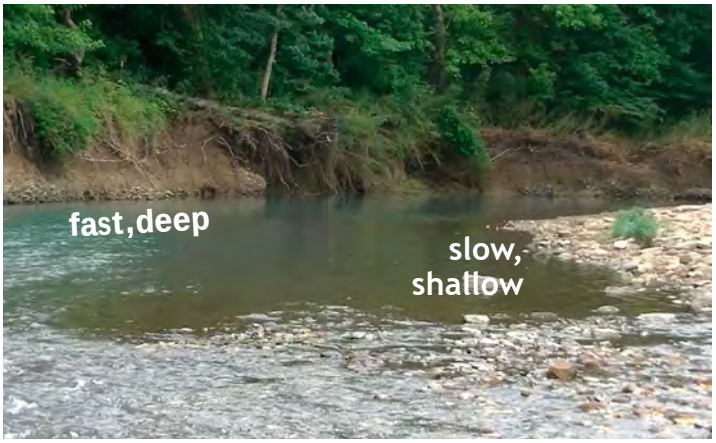
All free-flowing rivers have currents, but not all rivers have the drops and obstacles that create whitewater rapids. There are many more miles of rivers navigable by small boats without rapids than there are with white water. Therefore, we'll begin with currents. The strength of a current depends on the amount of water and the speed. The amount of water changes with seasonal runoff and can increase rapidly due to upstream rainfall or convergence of tributaries. The speed of the current for a fixed amount of water varies with the width and depth of the channel and the **gradient**, that is, how much the river bottom slopes downhill. The flow of a broad river constricted into a narrow canyon speeds up. The speed of the current slows down exiting the canyon onto a flat, broad plain.

The shape a river takes depends on the total flow and local geology. Forces within the earth raise mountains, but rivers shape the land and eventually move material from the mountains into the sea. Competent river paddlers know how to read a river, and reading a river is easier if you understand some simple geologic concepts of **fluvial** (river) systems.

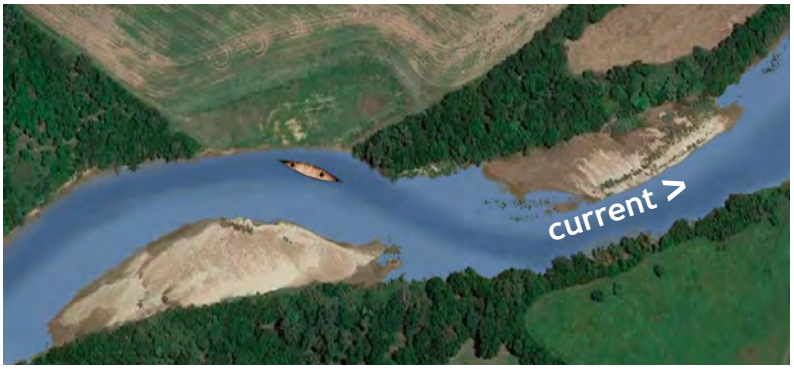
In mountain country, water cascading downhill erodes weaker rocks to form channels. The channels tend to be steep and narrow with abrupt drops, and that leads to white water. Eventually, the rivers form wide valleys and wear the land into broad plateaus or plains. Rivers in valleys or on the plains continuously rework the soils and sediments they have deposited in previous ages. The channels are not straight conduits to the sea, but rather twist and turn or **meander**. In steep valleys, the meanders are gentle curves. On flat plains, meanders can form large, complicated loops. Each meander has a cutting edge that erodes sediments. The curve cuts through the land and becomes tighter. Eventually, high water during floods will break through the neck and temporarily straighten the river. The process then starts over. In flood stage, water extends from bank to bank, or beyond. In low water, the flow may break up into several different channels, each meandering within the overall width of the riverbed. Rivers nearing the sea may also divide into numerous smaller channels, with the current switching direction depending on the tide.

The meander process has important implications for the boater. As the river switches from one curve to the other, there will be short stretches of relatively straight channel. In a straight channel, the fastest current is in the middle. Because faster currents erode quicker than slower currents, the deepest water will also be near the center of a straight channel. The faster center current will also pull water in from the sides. That is, floating objects may drift to the middle.

In a curved riverbed, the fastest current and deepest water will be on the outside of the bend; the current on the inside of the bend will be less. The faster water on the outside of the curve erodes the bank, which means access on that side is often difficult. Larger sediment particles fall out of suspension as the current slows, so the inside curves of a river often have shallow sandy stretches that make good launching and landing sites.



At low to medium water levels, you will want to travel in the channel to avoid grounding or hitting the bottom with your paddle. That means you will travel from one side of the river to the other to stay on the outside of the meanders. You mainly stay parallel to the current. Cutting across a bend near the inside bank might be shorter, but you normally will make better time if you stay in the channel. If the river splits into several channels, follow the one that seems to have the greatest flow.

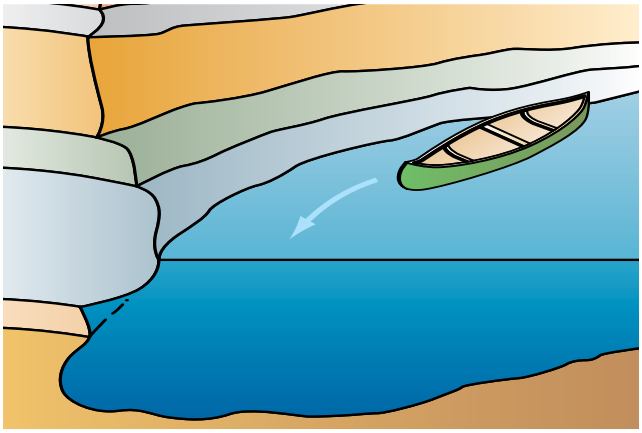


If you find yourself on a river with the water rising, you may wish to avoid the main current while looking for a safe place to take out early. In that case, stay toward the inside of a curve, and toward the bank rather than in the center of straight stretches. That means you need to move from one side to the other across the current flow. That can be tricky in swift water unless you do a ferry maneuver. Ferries are an important skill in a river runner's toolbox and will be covered a bit latter.

Strainers

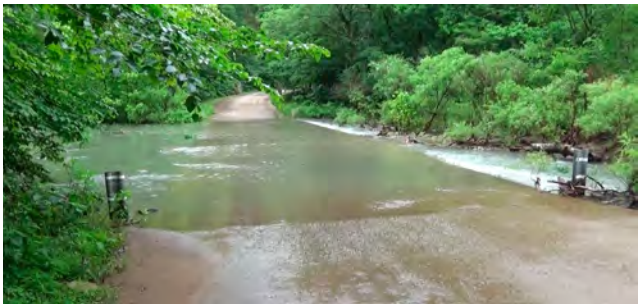
Trees often grow along rivers, even on the plains. As the meander cuts away the bank along the outside bend of a river, trees fall and become lodged across the strongest current. **Strainers** effectively block the channel for boaters with little effect on the current. **Sweepers** are trees leaning over with branches in the water. Both can pose significant hazards to the paddler. Look well ahead for strainers, and be particularly careful coming around tight bends where visibility is limited. If there is a strainer ahead in the main current, then hug the inside of the bend to avoid it. Stop and scout if there is any doubt of getting around the obstruction. Strainers are particularly dangerous for novice river paddlers in strong currents - paddling harder without control of direction is not enough. Moving across the current is a skill acquired through experience. Although many strainers are located near the cut bank, floods can dislodge trees and move them just about anywhere. Some can be hiding just under the surface. Avoid any branches sticking out of the water.

Undercut Cliffs



If the cut bank is formed from rock rather than soil, erosion will be slower, and meanders tend to have less curvature. However, erosion still occurs. Scouring over the years will cut into the rock below the waterline while leaving the cliff face above the waterline intact. Different rocks erode at different rates, so the profile of the bank may vary above and below the water. In some rivers, bottom erosion will match or exceed erosion to the side, and you may be able to drift along in the shadow of an overhanging cliff. However, in other rivers, particularly at normal or high water flows, underwater currents may sweep in an undercut channel just below the surface. Such features may be invisible from above and can be dangerous if a capsized boat or swimmer is swept underwater. Because such hazards may not be apparent from the surface, be leery of strong currents against rock cliffs and check river guidebooks and others who have traveled the river before. If the river is not wide and slow enough to avoid the undercut bank, the area should be portaged.

Road Crossings



Large bridges may have supports in rivers but those are generally easy to avoid. Back country roads may have concrete pads at river level. Those are typically called low water crossings since cars can only pass when river flow is minimal. Paddlers often need to get out of their boats to walk across the road bed which might be slippery due to algae. Some rivers have very low bridges with the water flowing beneath rather than over the roadway. Those can be hazardous and should be portaged.

Low-Head Dams and Horizon Lines

Some small rivers have low-head dams or weirs stretching in a level line from one bank to the other. The river falls evenly over the structure and often creates an extremely dangerous recirculating flow, or **hydraulic**, at the foot of the dam. These are aptly called "drowning machines" and should never be run. Identify any dams during trip planning and make sure each can be safely portaged. When on the river, look well ahead for a **horizon line** indicating you are approaching a low-head dam (or waterfall). The abrupt drop in river level below a low-head dam makes the river appear to disappear momentarily beyond the level horizon line across the river.

Current Measures

The total amount of water passing a point in a set time is measured in cubic feet per sec (**cfs**). River flows are often reported daily in newspapers and on newscasts, particularly for rivers where the flow depends on dam releases. Other rivers have gauges that measure the height of the water relative to some datum. Neither a flow report nor a gauge reading by itself will tell you if there is sufficient water for an enjoyable float trip, or too much water for a safe trip. A large river at low levels may flow several thousand cfs; the same level in a smaller river would indicate a major flood. Check river guidebooks for sources of flow information for specific rivers and suggested safe levels, and note the level during any trip you take for future reference.

If you suspect the water is rising during a float trip, take a short break onshore and note the level by placing a rock or stick at the river's edge. If the water covers your gauge after a few minutes, it's time to consider your alternate takeouts. If you are spending the night on the river, set up a makeshift gauge and check it in the morning. Changes in level due to rain or dam releases upstream of your location may not be immediately obvious.

The most important thing to remember in river paddling is that moving water has tremendous, unrelenting power. Suppose a canoe in a current strikes a rock and comes to a sudden stop. Since energy increases with the square of the speed, the energy required to stop the canoe from 5 miles per hour will be four times that at 2.5 mph, even though the speed only doubled. However, the energy also depends on the mass. The impact on a rock of an empty canoe drifting at 5 mph is about the same as dropping the canoe on the rock from a height of 10 inches—not something you want to do, particularly on a sharp rock, but the canoe will likely survive. Now swamp the canoe so it is drifting along full of water. The impact on the rock will now be similar to dropping an empty canoe on the rock from 28 feet. You don't want to be between a swamped canoe and a rock any more than you want to try to catch an empty canoe dropped from a two-story building.

You can also get a feel for the power in moving water by comparing it to the power in moving air. Water weighs 770 times more than air, so water flowing at only 3 mph has roughly the same energy per cubic foot as a hurricane-force 80 mph wind. Put another way, standing on top of a car traveling at 80 mph would be very difficult (and extremely foolish). Standing neck-deep in a 3 mph current would be about as hard.

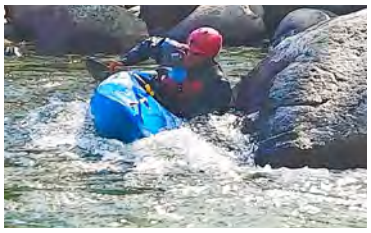
Also note that how you position yourself influences your interaction with the wind or the current. Point a closed umbrella into a wind, and the force on the umbrella is small. Open the umbrella pointed into the wind and the force increases significantly, but not as much as it would if you opened the umbrella to catch the wind. The same applies to a boat in a current. Point the boat with the current, and the force will be less than with the boat turned sideways to the current. If a swamped canoe is snagged by a strainer with gunwales facing downstream, the force will be less than with the gunwales facing upstream.

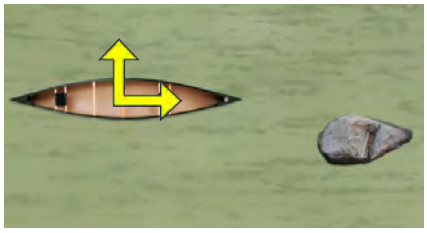
Sideslips

Most of the time, you should keep the canoe parallel to the current and make course adjustments by moving the canoe sideways. In a solo canoe or kayak, use either a draw stroke or a pry. In a tandem canoe, one person does a pry while the other does a draw. Sideslips are used to align the boat to pass between bridge pilings, to follow the channel in shallow rivers, and to avoid obstacles such as a submerged tree lurking just below the surface.

Suppose there is a rock or other obstacle dead ahead in a strong current. You might think about using a sweep to turn the front of the boat to the side, like you would steer a car. In the river, that is like putting a car into a skid. You turn sideways to the rock while continuing to move forward. If you wait too long for the strength of the current, the result will be to **broach** on the obstacle. It doesn't take much current to bend a canoe in half.

If a broach appears unavoidable, try to lean the boat toward the obstacle so that the current will flow around the bottom of the hull rather than into the boat. Your first concern, however, is to avoid being trapped between the boat and the obstacle. If the boat does not quickly slide past the object, get clear of the boat, fast.





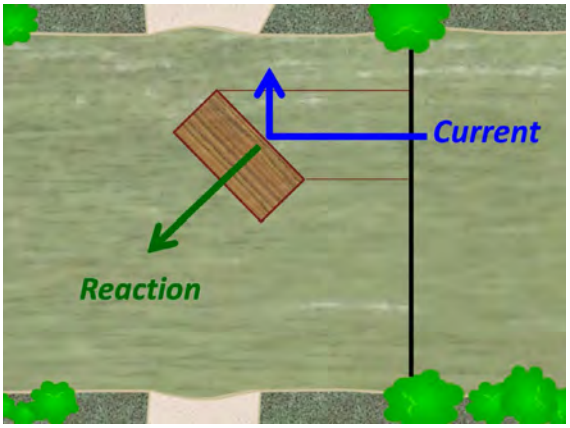
The better way to avoid an isolated obstacle is to slideslip the canoe using draw and pry strokes. That is, to keep the canoe parallel to the current.

Tandem canoeing in a river requires teamwork. The stern paddler is sometimes in a better position to make general course corrections, but the bow paddler is more likely to first notice an obstacle just below the surface. Clear verbal communication is a must, but a team used to paddling together will automatically take cues from each other. For example, if the bow paddler begins a draw or a pry to avoid an object, an experienced stern paddler should automatically perform a matching stroke to move the boat sideways.

Ferries

River paddlers strive to use the power of the current to advantage, rather than trying to work against it. One such strategy is used to cross from one side of a river to the other. You can move across a current with draws and pries while drifting downstream. That keeps your craft parallel to the current, which is good, but you'll travel a long way down river before you make it all the way across. You might be tempted to strike straight across, but that will turn your boat broadside to the current and you will still sweep downstream at the speed of the current. Alternately, you can stop near one bank, turn around, and paddle upstream at an angle with your bow pointed ahead of where you expect to land. The last maneuver is one version of a **ferry**, named for an analogous technique used by a barge connected to each bank with a rope or cable. To understand how a ferry makes use of the current, it's useful to look at the barge analogy.

A barge connected by pulleys to a line stretched across the river can be pulled across by grasping the rope. However, if the barge is set at a slight angle to the current, the water itself will move the ferry from one side to the other. Current striking the upstream side of the barge pushes it sideways as well as downstream. Tension in the rope cancels out the downstream portion, and the remaining force will move the barge across the current without the ferry operators pulling on the rope. (There is a counter force at the narrow end of the barge, but it is smaller than the force on the long side.) To move back to the other side, the operators reverse the angle to the current. The upstream end is always angled toward the opposite bank in the direction of desired travel.



If a canoe or kayak is paddled upstream with the bow angled slightly toward the opposite shore, the current will provide the sideways force while the paddlers substitute for the rope. If the paddlers are able to match the current in strength, the boat will slide across like the barge. More likely, there will be downstream drift, but not as much as if paddling straight across. A larger angle speeds the crossing but also results in more slippage. In tandem boats, the person in the stern holds the angle with pries and draws while the person in the bow attempts to hold position with forward strokes. A solo paddler has to maintain the angle while also moving against the current.

A downstream ferry is done with the boat facing downstream, but with back strokes used to counter the current. The stern is angled toward the opposite bank.

Note that it is the angle of the boat to the current, not to the shore, that determines the ferry angle. Also note that ferries are more difficult if the upstream end is trimmed lower than the downstream end. An unbalanced boat will work like a weather vane with the deep end swinging downstream.

Fast or Slow?

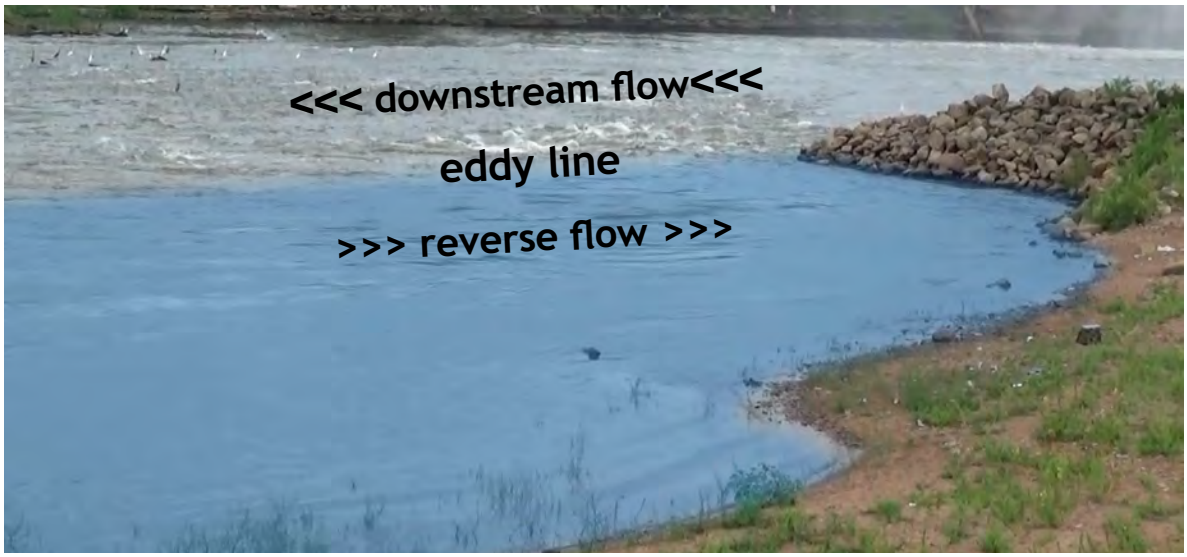
During upstream and downstream ferries, the boat is slowed relative to the current. Some strokes depend on the boat moving either faster or slower than the current. If you are moving along at a good pace on flat water and set the blade as a rudder at the end of a stroke, the boat will quickly veer to one side or the other. If you hold water to stop the boat, it slows rapidly. If you are drifting with a current going at that same speed, a set rudder angle won't work and holding the paddle vertically fixed to the boat won't slow you down. Changes in motion require acceleration, that is, movement of the paddle relative to the water. In the flat-water case, you deflect water by holding the forward-moving blade against the resistance of the stationary water. When drifting with a current, the same actions don't work since the boat, paddle, and water are all moving together. If you paddle faster than the current, then the rudder and holding water will again work as expected. If you are moving slower than the current, then holding the blade fixed relative to the boat works as it would if you were backing water.

Moving faster than the current is naturally accomplished using forward strokes and helps maintain control of the boat. However, moving slower than the current, as in the ferries, is also a valuable option and can provide additional time to react in tricky situations.

Eddies

Any fixed obstacle blocks the current and creates a "shadow" zone immediately downstream. Water flows sideways from the deflected current to fill in the shielded region. If the obstacle is wide enough, water will actually flow upstream for a short distance. The area of reverse flow is known as an **eddy**, and the boundary between downstream and upstream flow is called an **eddy line**. Boaters crossing an eddy line unawares risk capsize as the opposing currents carry the bow and stern in different directions and the boat pivots.

Whitewater paddlers make use of small eddies behind midstream rocks as rest stops and scouting locations. To do so, they need to develop precise eddy turns to quickly move into a tight location. Paddlers on larger rivers without obstacles are more likely to encounter eddies on the inside of tight bends, behind weirs extended partway into the current, or behind bridge pilings or other artificial structures. In most such situations, the eddies are avoided altogether by staying in the main channel clear of any obstacles. However, sometimes a takeout point may be at an eddy site.



To enter an eddy, the boat should be pointed toward the upstream start of the eddy line at roughly a 45-degree angle. As the bow crosses the eddy line, it will automatically turn upstream as the stern continues downstream. Paddlers should drive the boat into the eddy as it pivots. A paddle blade planted on the upstream side of the bow will make the boat pivot faster. The bow person in a tandem canoe can use either a draw or a cross draw stroke, depending on the paddling side. This is a **stationary** draw. The object is to catch the upstream current with the blade—it is not necessary to pull against it. The paddler should be ready to hang on. The boat is leaned upstream into the turn.

You can slip out of a broad eddy near its tail to continue downstream. However, a broad eddy in a river free of obstacles is a good place to practice some skills needed for white water. Try a **peel-out** with the boat facing upstream. Drop downstream a bit against the eddy and align the boat facing upstream with the eddy line. Drive the boat forward to cross the eddy line at an angle. A bow paddler uses a stationary draw to pull the bow into the current as the boat pivots to head downstream. The boat is leaned downstream into the turn.

River Signals

The lead boat on a river trip should contain experienced paddlers who, ideally, have traveled that particular river several times before under different water conditions. The boat next in line should follow the path of the lead boat and make sure the boat behind does the same, unless the lead boat signals otherwise. Standard river signals using paddles have been developed so that information from the lead boat can be clearly communicated to boats behind. Review these signals at the start of the trip. Caution those in the group to avoid pointing at hazards. That is too easily mistaken as indicating a direction to proceed.

Stop

Help (wave side to side)

Are you OK? (pat 3 times)

Run this way

Run down center or all clear

I'm OK (pat 3 times)

Self-Rescue

Everyone on a river trip needs to know how to react to a capsize in moving water. If feasible, stay with the swamped boat. It provides support and will be easy for rescuers to spot. Stay at the upstream end to avoid being caught between the boat and an obstacle. Slowly swim the boat to the side while waiting for another boat to provide a tow.

Do not jeopardize personal safety in an attempt to retrieve gear. Swim for shore if:

- You have been thrown clear of your boat.
- The water is very cold.
- You are approaching dangerous rapids or other hazards.

In deep water, swimming a fast forward stroke is feasible if time is short. If you have time to "go with the flow" to reach calm water ahead, swim on your back with your feet and legs pointed downstream near the surface. Swim backward to ferry toward shore or to avoid obstacles.

Do not attempt to stand in shallow water above your knees. If your foot becomes wedged between rocks on the bottom, you may be unable to keep your head above water against the force of the current.

If thrown a line, float on your back, feet downstream, with the line over your shoulder and held to your chest. Do not attempt to pull yourself along the line. Instead, swing with the current toward shore.

If you are being swept toward a strainer, change from the feetfirst position on your back to a headfirst position on your stomach with your head out of the water and your legs at the surface. Try to climb onto or over the strainer instead of getting sucked underneath.

Boat Assists

If your buddy boat capsizes ahead of you in a current, first look for an obvious cause. You may need to maneuver around a submerged obstruction to avoid swamping yourself. If so, pick up swimmers after they float clear. Quickly check to see that paddlers are conscious with their heads above water. A kayaker needs to either exit the craft or perform a roll. Next, look ahead for other possible hazards and decide whether to approach swimmers from the left or the right. In unobstructed water, have swimmers hold onto the ends of the rescue boat as you ferry toward a safe landing site onshore. You may need to drift downstream until a safe exit comes into view. Downstream craft should back water and position themselves to assist swimmers or retrieve loose gear. Everyone's first concern should be for the swimmers. Boats and other gear are secondary concerns.

If you have maneuvering room and the capsized boaters are drifting with their boat, you can slowly tow the swamped boat and the swimmers if they are able to hold onto your boat's grab loop or painter.

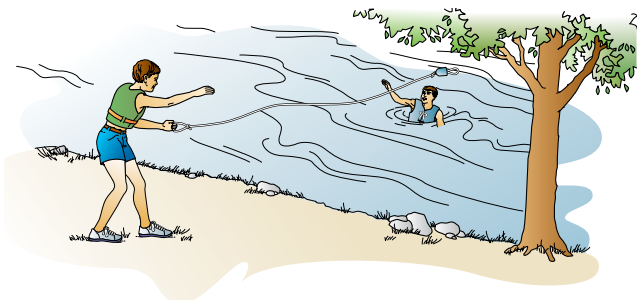
Throwing Assists

Boats that are significantly ahead of a capsized craft may have time to land and get ready for a throwing assist using a **throw bag**. A person setting up for a throwing assist should have secure footing, ideally above a good landing spot for the swimmer. If the bag is cinched shut with a plastic slide, make sure the top is open enough for the line to play out freely. Hold the bag in one hand and the end of the line in the other hand. Try to get the swimmer's attention by yelling "Rope!"

Throw the line while the swimmer is still slightly upstream. A good throw should lay the rope across the victim's chest, but you will need to allow for a moving target. Normally the bag is thrown underhand, but an overhand toss may be used to clear weeds near the shore.

If the river is free of obstructions and the shoreline is clear, the rescuer can walk downstream and inland to pull the swimmer toward shore without having to hold the swimmer against the force of the current.

If there is not an easy path along the bank, be prepared for considerable force if the line becomes taut. Additional rescuers can help hold the line. If necessary, belay the line around a stout tree or large rock. Let the current swing the swimmer toward shore. Alternatively, run the line around the back of your hips, and brace your feet in a wide stance. You should be able to release the line at any time, from yourself if you are about to be pulled in, and from the belay if the victim gets tangled in the line and needs it slack.



Tubing

Drifting down a shallow, lazily flowing stream on a warm, sunny day on tubes, air mattresses, or small rafts is a pleasant way to pass the time. Even though the activity is akin to swimming, once you leave the confines of a swimming area to venture down moving water, Scouting America Safety Afloat standards apply. All participants must pass the Scout *Swimmer* classification test, wear a life jacket, and have a buddy close by. Make sure you know the water ahead and allow plenty of time to meet your float plan.

Ideally, the tubes should be designed for river floating, with concealed valves, a mesh or net cover, and grab lines. Be wary of exposed valve stems on inflated tire inner tubes. Auxiliary gear should include shoes, sun protection, and plenty of safe drinking water.

Tubes are generally controlled with the hands, although small fins or hand paddles may be useful. Canoe and kayak paddles are generally not worth the trouble—tubes tend to spin.

Since tubes are difficult to control, avoid all but the gentlest of currents (Class I as defined in the next chapter). If you want the adventure of white water, stick with a canoe, kayak, or whitewater raft.

Chapter 21

Whitewater

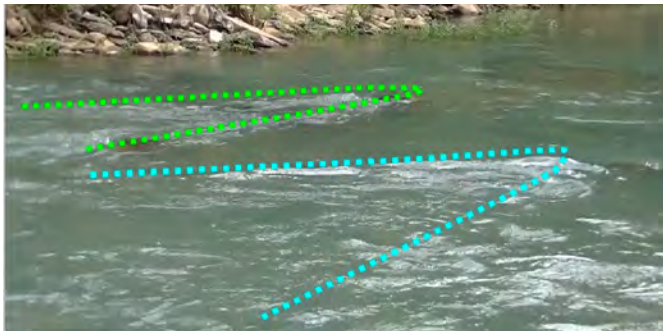
Increase the gradient of a river with a decent flow; then throw in drops, exposed rocks, and constrictions, and whitewater results. Safety on flowing water requires additional knowledge and skill beyond those needed for calm water. Safe whitewater excursions require even more expertise, which is best learned in stages from a skilled, experienced instructor. Scout units without the appropriate experience should consider whitewater activities offered by Scouting America national and council camps.

Whitewater Features

Describing whitewater requires an additional vocabulary to account for various features caused by changes to the river channel. Note that many of these features will be easier to identify looking down on the river from a high bank. They may be hard to spot from river level.

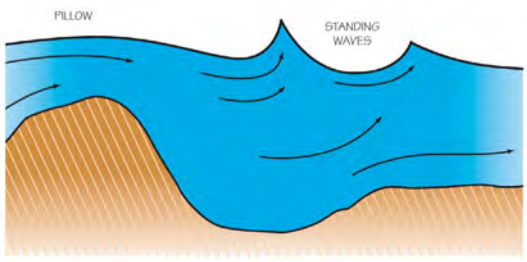
Upstream and Downstream Vs

Each isolated rock or other obstacle will deflect water to the sides and produce a V shape pattern in the current that points upstream. Slideslip upstream of such features to avoid the obstacle and a possible broach.



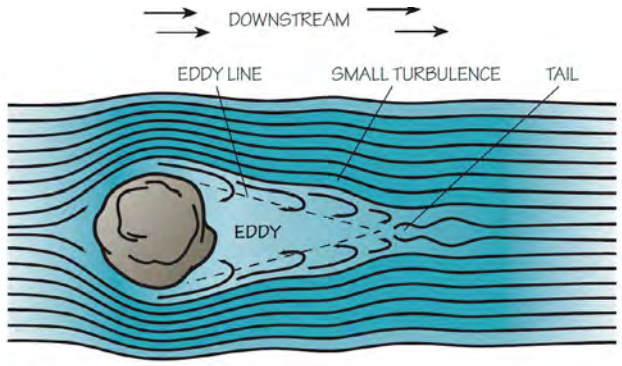
Two rocks in line across a river will each produce an **upstream V.** Those two Vs with their points upstream will produce another V pattern between the rocks with a point facing downstream. That is, for a **downstream V,** the wide end of the V is upstream and the point is downstream. Downstream Vs also form when water passes through a break in a ledge. Downstream Vs often indicate the best route. Aim for the point, or just to one side.

Standing Waves



The faster water flowing in an open V will often produce **standing waves** as it hits slower water downstream. Waves in a river are often caused by changes in flow rate, rather than by obstacles below the surface. Water speeds up in a narrow channel and slows in a wider channel, for example, below a break in a ledge that produces a downstream V. The flow also slows down going from shallow water to deep. A line of small waves just below a downstream V often indicates deeper water and a good route. However, if the waves are too large, particularly if they are breaking back upstream, you may need to avoid them, particularly in an open canoe. Large standing waves are also called **haystacks**.

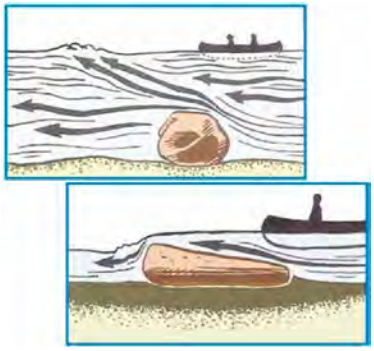
Eddies



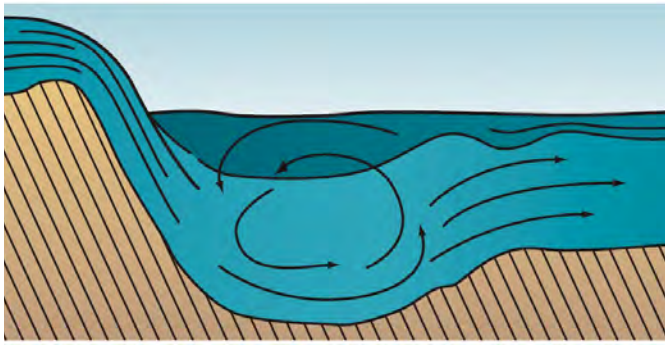
Any stationary object that protrudes above the surface will deflect current to the side and produce a counter flow as the water fills in behind the object. If the object is wide enough, the counter flow, or **eddy**, will be big enough to shield a boat from the downstream current. A popular strategy for running long rapids is to hop from eddy to eddy to rest and scout the next stretch. An **eddy line** separates downstream from upstream flow and must be crossed correctly to take advantage of the shadow zone behind the object.

Pillows

A deep rock in a strong current will produce a boil on the surface downstream of the rock. A **pillow** will form as water pours over a rock near the surface. Pillows, particularly over large flat rocks, can cause calm-looking areas in rapids and should be avoided. If the rock breaks the surface, the water piling against the upstream side will produce a pillow that will help push you away from the rock if you strike it at a glancing angle rather than broadside.



Holes



Given the right combination of rock shape and current strength, water flowing around and over a large rock just beneath the surface will create a depression, or **hole**, that is filled by a large standing wave that curls back toward the rock. Unlike eddies, **holes** should be avoided. If a break in a ledge or between rocks is accompanied by a steep drop, the water cascading down will also form a hole that is backfilled from downstream. Water pouring over an unbroken ledge can produce a dangerous hydraulic similar to a low-head dam.

Drops

Abrupt **drops** can range from a few inches to major waterfalls. They can stretch across the river or form at breaks in ledges. Small drops can be fun. Amazingly high sheer drops are run by experts in decked boats willing to take extreme risks. Scout units should portage such features. Several rock ledges may create a series of smaller drops. These should be studied carefully from shore. Portage any situation where there is not sufficient space to line up the next drop after the first, or where an error anywhere in the series exposes boaters to an unacceptable hazard farther downstream.

Shoals

Rivers at low flows or with stretches where the channel is wide and shallow may have sections of "dancing" water or **shoals** caused by numerous small rocks near the surface. Stay close to the outside of river bends where the channel is deepest, and aim for any obvious downstream Vs. Be ready to step out of the boat if it drags bottom in very shallow water. Boats may be lined through short sections of shallow shoals, but be wary of tripping hazards and foot entrapment.

International Scale of River Difficulty

American Whitewater maintains the U.S. version of a river rating system used to compare the difficulty and risks of various rivers at different flow levels. Check out americanwhitewater.org for details. It contains ratings and describes for numerous rapids on a large number of rivers. Chances are you will find ones you are interested in. Even so, the scale is at best a rough estimate. Particular rapids may not fit easily into the categories, and individuals from different parts of the country may interpret the scale differently. However, a river purported to have numerous Class III to Class IV rapids should be more challenging than a river with mainly Class II rapids but a single Class IV rapid that is easily portaged. Therefore, the scale can be used to help decide whether to embark on a section of a river. You should still supplement the rating system with individual knowledge and detailed descriptions found in river guidebooks. Even then, keep in mind that a river may change from one run to the next, even if the flow is similar. Note that rapids at the lower or upper end of the range may have – or + designations. See the above website for the complete text of the classification scheme for Class V and VI.

Even though the Class I description seems benign compared with the others, don't forget that any moving water can be hazardous, particularly to those unprepared for currents and cold water. Floating a river at flood stage is not recommended regardless of wave size or obstacles.

Also be leery of the term "novice" used to describe Class II. Class II runs are likely not appropriate for a Scout unit doing its first river trip.

Safety Afloat requires helmets to be worn when running rapids rated Class II and above and special training for unit led trips on Class III. Scouting activities on Class IV are limited to rafts with professionally trained guides in each raft. Trips are not allowed on rapids rated Class V and above.

Class I: Easy

Fast-moving water with riffles and small waves. Few obstructions, all obvious and easily missed with little training. Risk to swimmers is slight; self-rescue is easy.

Class II: Novice

Straightforward rapids with wide, clear channels that are evident without scouting. Occasional maneuvering may be required, but rocks and medium-sized waves are easily missed by trained paddlers. Swimmers are seldom injured; group assistance, while helpful, is seldom needed.

Class III: Intermediate

Rapids with moderate, irregular waves that may be difficult to avoid and that can swamp an open canoe. Complex maneuvers in fast current and good boat control in tight passages or around ledges are often required; large waves or strainers may be present but are easily avoided. Strong eddies and powerful current effects can be found, particularly on large-volume rivers. Scouting is advisable for inexperienced parties. Injuries while swimming are rare; self-rescue is usually easy but group assistance may be required to avoid long swims.

Class IV: Advanced

Intense, powerful, but predictable rapids requiring precise boat handling in turbulent water. Depending on the character of the river, it may feature large, unavoidable waves and holes or constricted passages demanding fast maneuvers under pressure. A fast, reliable eddy turn may be needed to initiate maneuvers, scout rapids, or rest. Rapids may require “must” moves above dangerous hazards. Scouting may be necessary the first time down. Risk of injury to swimmers is moderate to high, and water conditions may make self-rescue difficult. Group assistance for rescue is often essential but requires practiced skills. A strong roll is highly recommended.

Class V: Expert

Extremely long, obstructed rapids requiring precise boat handling in turbulent water.

Whitewater Gear

In North Woods lake country, long treks favor touring canoes even though the trip may include short stretches on rivers between lakes. Many seasoned canoeists easily take on Class I rapids in such boats without special equipment or unloading camping gear. Helmets are needed for Class II and it might be prudent to portage critical, heavy loads prior to practicing skills in an isolated rapid. Some experts can handle Class III rapids in a long, general purpose open canoe full of gear. However, at some point, the open cruising canoe should be replaced with boats and gear better suited to the task. Whitewater canoes and kayaks have short, rockered hulls for easy maneuvering. Kayaks have small cockpits with spray skirts. Canoes have saddles and thigh straps rather than seats, and are filled with flotation. Hull materials are impact-resistant.

A strong, properly fitted helmet should be worn whenever upsets are likely in white water. Helmets are essential in any craft in Class II rapids or above, and should be used in kayaks and decked canoes for most river travel. The head of a paddler in an open canoe generally stays above water during a capsize, but needs a helmet for protection when swimming through rapids. A paddler in a kayak or decked canoe rolls head down, even if doing a wet exit rather than a roll, and therefore always needs head protection in rivers with rocks, shallow water, or other obstructions. Use helmets designed for white water; don't rely on a bicycle helmet to meet the need. Material should protect the forehead, temples, ears, and the base of the skull. Most helmets feature holes that allow water to drain. The helmet should feel snug but comfortable.

Paddling Skills

Some basic skills needed for river travel were covered in the last section. Paddlers in any craft should be able to travel forward and backward parallel to the current and move sideways while staying aligned with the current. However, a boat in white water seldom moves in a straight line or even where it is pointed. Frequent turns occur at all angles to the current. Paddlers in white water need to perfect ferries, eddy turns, and eddy peel-outs. Various braces and stationary draws, both onside and offside, help with those maneuvers. Kayakers must learn wet exits with a skirt and need to perfect a roll in moving water if they expect to tackle rapids with higher ratings. Some of those skills are discussed in the **Whitewater** merit badge pamphlet and the Scouting America **Fieldbook**. Those will not be repeated here: Whitewater skills must be acquired through demonstration and practice rather than picked up by reading.

A sweeper viewed ahead may appear to have plenty of room to pass to one side. However, the first experience a paddler has with back paddling and side slipping in a strong current should not be frantically trying to avoid being swept into a dangerous feature. Skill is essential for safety.

It is feasible for individuals or groups to move systemically from flat-water to whitewater skills. A day or two of instruction and practice on flat water with a competent instructor can safely be followed by a day trip on a Class I river guided by an instructor familiar with that run. Subsequent trips can be on more difficult sections of river. Some rivers are of the pool-and-drop variety with long stretches of Class I water interrupted by short, isolated rapids. The drops can be run multiple times to perfect skills without the danger of a mishap carrying a capsized boat into another hazard. Once the group learns the skills in a safe, relaxed setting, more ambitious trips can be considered. That is a viable approach for a Scout troop or a Venturing crew with capable leadership to gain the

skills needed for paddling at the Class II level along with an occasional Class III (-) challenge. Numerous rivers will fit those categories; there should be plenty of variety to keep the group engaged without the need for higher and higher skill levels. As new members cycle through the unit, they can be brought up to speed with more experienced youth without having to bar new members from unit trips because of skill level. However, other training options are available if unit leadership lacks basic instructional capability, or a Venturing crew really wants to tackle the nearby Class III river.

Learning by doing is fine in concept, but can leave large gaps if the procedure is not systematically arranged by a knowledgeable leader. Scout units lacking internal resources may get useful assistance from local paddling clubs. Ideally, the local club will have volunteer instructors certified by the American Canoe Association or a similar organization. ACA instructors offer canoeing and kayaking courses from basic to advanced, from flat water to different levels of white water. The ACA also has courses for float-trip leaders. Check out the ACA website at **www.americancanoe.org** for course outlines and contacts with affiliated clubs.

Scout units may also obtain whitewater instruction and experience at various local council summer camp programs as well as the National High Adventure Base at the Summit.

Failing a local volunteer or camp connection, there are many commercial paddling schools where a unit can obtain professional instruction to jump-start a whitewater specialty. Course location, duration, and price are all practical considerations in the choice of a paddling school. Also evaluate schools based on years of operation, type and condition of equipment, instructor training programs, and recommendations from other Scout leaders.

Whitewater Strategy

Even a properly trained and equipped group faces important decisions when deciding whether and how to run a particular rapid.

- **Know the river and the group.** Knowledge of the river and the skills and limitations of the group are important aspects of trip planning. Once on the river, that knowledge is used to gather the group at a safe landing above any feature that needs scouting from the bank. The only portage around a waterfall may be on one side above a turn in the river. Hugging the opposite cliff side until the horizon line becomes visible around the bend may not allow sufficient time to avoid the hazard. Proceed into a rapid only if it is known to be easily within the capability of everyone in the group at current water levels. Otherwise, stop and scout from the shore. Rivers where scouting can only be done on the fly from one eddy to the next are for experts only.
- **Scout intelligently.** Walk downstream along the bank until the end of the rapid is in clear view, that is, until a point is reached where everyone boating or swimming the rapid will be able to regroup and land if necessary to scout the next feature. Then look back upstream to determine if there are one or more points to safely exit the rapid. Visually work upstream of likely exits to connect clear paths around intermediate obstacles until you arrive at likely entry points to the rapid. Then consider the plausible routes individually and discuss the pros and cons of each path as a group. In some cases there will be only a single viable path that does not require complex maneuvering beyond the group's capability. In other cases, there may be one easy route, and additional paths of increasing difficulty. Note that features clearly visible from a high bank may be difficult to see from water level. Safely running the rapid may depend critically on either lining up an intermediate chute or avoiding a dangerous hole. Look for landmarks, if any, that should be obvious on the water and factor those into the evaluation.

- **Decide.** Everyone in the group needs to individually decide whether they wish to run the rapid and, if so, which path to take. Different members of the group may have different preferences. No one should ever be pressured to run a rapid they view with concern. However, individuals may also overestimate their ability or discount the consequences of an error. For youth groups, adult leaders assume responsibility for the safety of those under their care and may elect to have individuals or the entire party portage a rapid that some group members would attempt on their own. The following questions will help individuals and leaders reach a reasonable conclusion.

1. **Is there a safe path?** If there is an unavoidable steep drop into a hole, if there is not enough room between ledges to align one narrow chute with another, or if the only chute with sufficient water depth runs straight into a boulder, the decision is easy. Everyone portages.

2. **What maneuvers are required?** Perhaps the paddlers need to sideslip past a rock near the point of a downstream V while negotiating moderate-sized standing waves. Maybe a short ferry is needed to align one chute with another, or perhaps an eddy needs to be caught to move from one side of the river to the other. Any course that moves across the current in short distances may require precise execution.

3. **Does each person have the skills necessary to make those maneuvers?** If a solo kayaker or a tandem canoe team missed an easy ferry or eddy earlier, they probably are not ready if tighter moves are required for the rapid under consideration. The goal is to keep the boat always under control. Paddlers who rely on luck rather than skill to maintain control during specific maneuvers should opt out.

4. **What are the consequences if maneuvers are not successful?**

A common result of a botched maneuver is that a paddler becomes a swimmer. No one should enter a rapid in a boat if they are unwilling to swim that same rapid in case of an upset. The risk to a swimmer often depends on where in a rapid a capsize occurs. If the only critical maneuver occurs near the end of the rapid, the swimmer may simply be swept into a safe pool. If difficult maneuvers are required near the start of the rapid, the results of an error are more dire if the swimmer faces steep drops, holes, or undercut rocks. When calculating the margin for error, also consider the temperature of the water. Longer swims increase the likelihood of hypothermia. The other risk of a botched maneuver is the loss of a craft. Consider the chances of a boat wrapping around a rock for upsets in different parts of the rapid. Finally, consider the chances that a boater will be pinned in a craft.

5. **Are the consequences acceptable?** This is the kicker. Risk to life and limb should always be minimized. But a swimmer swept into a deep pool after a short swim in warm water may only slow the trip down a bit. In between the obvious are situations where the potential loss of gear and time are more inconvenient than hazardous. Remember that a float trip is meant to be an enjoyable experience. Just because you have planned ahead and can get everyone off the water safely doesn't mean that a lost boat is an acceptable risk. When in doubt, err on the side of caution. There will be other rapids where the group will have fun and gain experience.

Whitewater Rafting

Units without the training or gear to undertake a whitewater trip on their own have other options for catching the thrills and challenges of white water. Commercial rafting trips cater to people with limited experience. Short trips may take only a few hours. Other trips take a week or more. In oared rafts, participants are along for the ride. A professional rower maneuvers the raft through the rapids. In paddle rafts, riders participate by paddling under the direction of a trained guide at the stern. The rafts are large and stable and can handle heavy white water. However, realize that a raft ride on a wild river is not the same as an amusement park ride. Statistics compiled by American Whitewater show that commercial whitewater-rafting trips are not without risks, including fatalities. Even the largest rafts can flip and send passengers for a swim. Flush drownings may occur even when swimmers are wearing life jackets and avoid striking objects. The key to a safe, enjoyable experience is a competent rafting service.

Use the following criteria to compare rafting services:

- **Years of operation.** New outfitters may operate to the highest standards, but those who have been around awhile and still stay booked have a proven success record. However, experienced companies may hire inexperienced guides.
- **Safety record.** Operators are unlikely to share poor safety records but may use clear records in their advertising. Check various websites for additional information, including contacts with government regulators.
- **Condition of equipment.** Helmets, life jackets, rafts, paddles, food storage containers, and other equipment need not be brand new, but should be clean, functional, and up-to-date.
- **Safety policies.** Rafting services cater to the general public and therefore may not have guidelines as strict as those of Scouting America concerning ages and swimming ability. However, there should be reasonable restrictions based on age and physical condition. Pretrip orientations should include proper fitting of helmets and life jackets, and what to do if knocked overboard or the raft flips. Overnight trips should include additional safety instruction relative to camping, communication, and first aid.
- **Guide training.** Some states closely regulate the rafting industry and require specific guide training programs that result in licenses. Other states simply require rafting services to post a fee. Therefore, phrases such as “state approved” or “trained guides” will have different meanings in different locations. Reliable operators should gladly share details of their guide training programs with prospective clients. Many do so on their websites. Check first-aid training and emergency action plans as well as rafting credentials.
- **Instructional programs.** Some operators include natural history and ecology programs in sections of river between rapids. Many operate under permits that require ecological responsibility.
- **Alcohol policy.** Most serious whitewater enthusiasts agree that alcohol and other drugs are not conducive to whitewater performance or safety. However, a few groups see float trips as opportunities for binging, and some whitewater guides are known to indulge heavily when off the river. Even though Scouting trips should be alcohol-free, check a rafting company’s policy on alcohol use by participants and guides, particularly for overnight trips. Some limit alcohol to an evening meal; others restrict alcohol consumption to a post-trip party. Look for a company that enforces a policy of restraint.

Commercial rafting services are not solely of interest to those without whitewater skills. Access to some rivers is by permit only, which may take years to obtain. Commercial rafting operators may have access to permits through other avenues, which means a trip down some popular rivers is best arranged through an outfitter. Some will escort kayaks with support rafts.

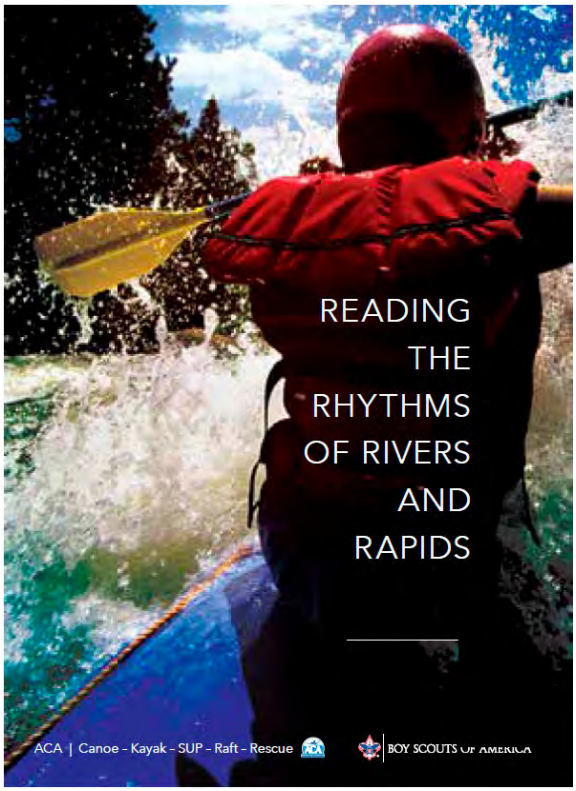
Scouting America High Adventure Bases

Several council camps offer an additional avenue for a Scout unit to undertake a whitewater excursion under proper supervision.

The national high adventure base at the Summit Bechtel Reserve is located in West Virginia near the New River Gorge National Park. The New River is one of the premier whitewater rivers east of the Mississippi. River programs at the Summit range from a short rafting trip on Class IV rapids to a 50 mile trek using kayaks and rafts.

Additional insights on river and whitewater features may be gained from the *Reading the Rhythms of Rivers and Rapids* video, a joint production of the American Canoe Association and Scouting America, funded by a U.S. Coast Guard–administered grant. The video may be viewed only through the following link or by scanning the QR code.

RIVER VIDEO



Whitewater Rafting Award Brochure

A twelve page brochure in support of the Scouting America Whitewater Rafting award is available for free download on the scouting.org website at Rafting Brochure. It provides a good summary of content from various chapters in this manual specific to that award and should be shared with participants and raft guides.

Chapter 22

Float Trip Preparation

"Where to go?" seems a logical first concern when considering a float trip, but several interrelated questions must be addressed together before the "where" can be finalized. Those questions include:

- **Who will go?**
- **How long?**
- **What gear is needed?**
- **How is the gear obtained?**
- **How much will it cost?**
- **How to get there?**

Because a trip is often triggered by a suggested location, we'll start there, and see how the other questions arise.

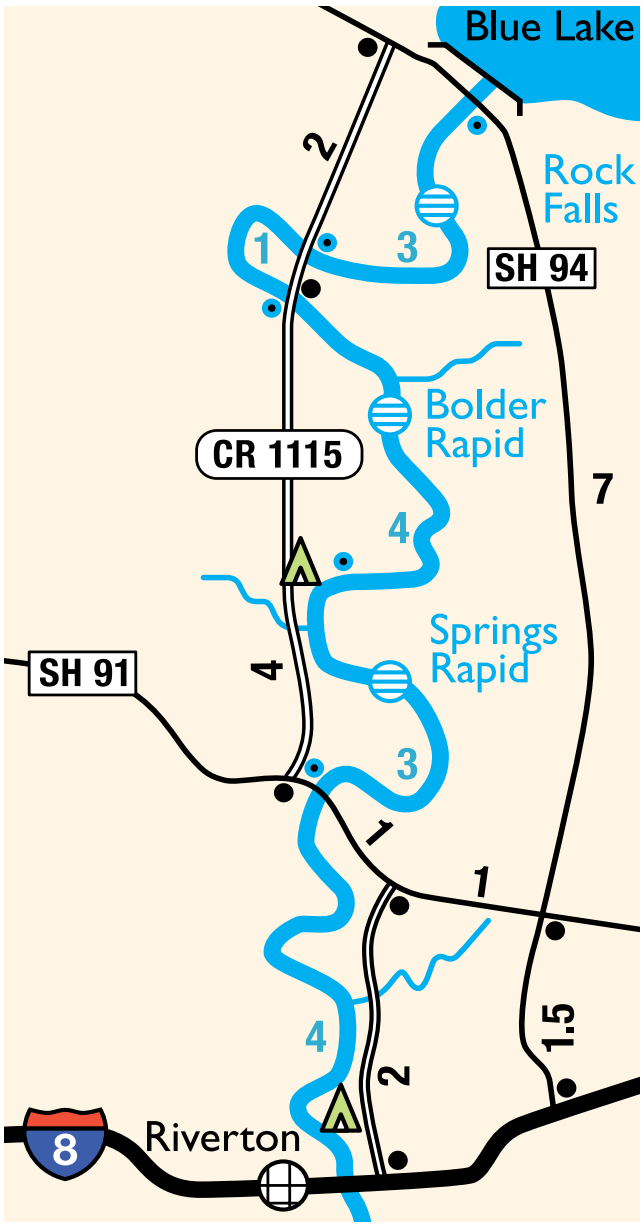
Researching a Location

Inexperienced parties should only consider trips accompanied by a leader who knows the route from firsthand knowledge. Ideally, a group will gain competence on short day trips before tackling an extended wilderness adventure. However, a skilled leader can guide inexperienced parties with adequate preparation. A group of older Scouts strong on camping but weak in canoeing can nevertheless enjoy the experience of a lifetime under the wing of an interpreter at the Northern Tier High Adventure Bases. **"Where?"** therefore depends on the experience of the leaders and the skills of the participants, that is, the **"Who?"**

More-experienced groups can use river guidebooks to review potential destinations. Many guidebooks are rather obscure publications; the internet can be used to track down a written or online guide to a particular river. Do a search on a location by name or check the websites of the major paddle sports organizations, of paddle clubs near the location, and of government agencies that regulate certain lakes and rivers. Sporting goods stores may carry printed guides for local destinations.

Guidebooks should provide maps and detailed information on required permits, put-in and takeout points, campsites, boat liveries, location and classification of rapids, and recommended water levels based on local gauges. Sometimes a phone number will be given for learning the current gauge level. Restrictions on group size, the type of food containers, fire options, and human waste disposal should be noted in the guide.

While guidebooks can offer a wealth of useful information, don't forget that rivers change and that one person's Class II is another person's Class III. Check the guide's publication date and use other sources, such as phone numbers provided in the guide, to make sure the information is still accurate. The location that once was a freely used campsite may have changed hands, and the new owner may expect a fee or prosecute campers for trespassing. For lakes and rivers on public property, check with park or ranger personnel. For lakes and rivers bordered by private land, don't assume you can camp anywhere without prior permission. Campsites may be limited to canoe liveries and state parks that will charge a fee and may require reservations.



Who to Take Where

Recall that Safety Afloat guidelines do not permit Cub Scout dens to conduct float trips.

Any youth operating a canoe or kayak must have passed the Scout *Swimmer* classification test. Although there are special allowances for nonswimmers and beginners to ride as passengers under limited conditions, a unit with many members lacking swimming skills should concentrate on learn-to-swim opportunities rather than float trips.

Safety Afloat requires participants for trips on flat water and moving water below Class III to demonstrate basic skill proficiency. Ideally, skill instruction is provided before a float trip, but time may be set aside at the beginning of a trip for basic skill review. Travel distances the first day should be adjusted accordingly. If a group arrives at the put-in point at midday, then an overnight stay at the launch area allows for skill review in the afternoon, followed by an early start the next day. The unit leader needs to use sound judgment when considering such options. It may be reasonable to allow time at the beginning of a short trip to check out a new member who claims to have experience. In a pinch, such a person can ride in a boat with a skilled leader. It is not appropriate to attempt basic instruction at the start of a long, remote trip when every member of the crew is a novice.

On rivers with rapids above Class II, there are three options: (1) a group with basic skills may portage an occasional Class III rapid; (2) those with advanced whitewater training may run rapids rated at Class III or above, provided they are confident in their ability to do so after scouting each rapid; and (3) a novice group may ride in rafts (or dories) under the direction of a professional guide in each craft. That last option means that trip planning involves selecting a rafting company as discussed in Chapter 21.

All things considered, Safety Afloat guidelines require unit leaders to only consider float trips consistent with the skill levels of unit members, both youth and adults. That might limit a large troop to conducting special high-adventure trips only for older, more skilled members. A Venturing crew whose activity interest survey focuses on whitewater canoeing may set a goal of a trip down a local whitewater river. However, the crew may need to plan training sessions and intermediate trips to accomplish that goal.

How Far in How Long?

River guidebooks are likely to give mileages between takeout points but may not provide typical times needed to make a run. That's because "typical" depends on many factors, such as the water level; how often and how long the party stops to rest, eat, play, explore, or scout; and the physical conditioning of the party. A Venturing crew practicing for a marathon race might cover 20 miles in a day, but five to 10 miles is more "typical" for a day trip, depending on how much time is needed to get to the launch point and make any necessary shuttles to get home before dark.

The best way to judge the time needed to cover a given stretch of lake or river is to make a conservative estimate based on previous experience with a similar group under similar conditions. Given a choice of a takeout point that is a little short compared with the next one that is twice the distance, choose the shorter distance. That way, the group can take time to enjoy the trip rather than racing against dusk while fighting a strong headwind. Livery companies on popular rivers will be able to provide reasonable estimates of travel time for a given flow level.

For an overnight trip on a weekend, you may need to choose among several popular river segments even though the group would like to do more. Make sure to factor in driving time. If you rent boats from a livery company, the livery's location may dictate your put-in and takeout points. They may prefer you start or end at their location to reduce the number of shuttles. Alternately, you may be able to launch upstream one day, camp overnight at the company's campground, and continue the next day to a takeout point.

For an extended trip on the water, it is prudent to schedule a short leg or a layover midway through the trip, ideally at a spot where there is something else to do rather than paddle.

Gear: What, From Where, at What Price

At a minimum, any float trip will require boats, life jackets, and paddles. Overnight trips will also require standard camping gear and provisions. Detailed lists are needed later in the planning stage, but the source of boats is a major consideration when first deciding on a location.

A unit with its own boats and boat transport has the greatest flexibility in choosing a location. Some boat livery companies rent boats only for their local stretch of lake or river, but others will rent boats and trailers you can take to various locations within their region. Using a local livery company is advantageous when they transport the boats for you. Otherwise, arranging your own shuttle can take time away from the water. Many boat liveries supply only the necessary marine equipment. Others are total outfitters equipped to provide food, tents, and cooking stoves in addition to boats. Although contracting with a complete outfitter simplifies the planning, it also ups the cost. A typical unit may find a better fit to their budget if they rent canoes from their council camp, buy their own provisions, and use their own camping gear.

Note: Even though you have made reservations for boats for a certain time, rental companies, including local councils, may void the agreement at the last minute if a river is up due to heavy rains the day before. That's a prudent business decision on their part and it also speaks to your safety. The best-laid schemes "gang aft a-gley" and need contingencies.

How to Get There: People, Boats, and Shuttles

Buses are handy for large groups with gear traveling over long distances without boats, and commercial carriers are recommended. Many groups arrive that way at the Northern Tier bases. If a unit uses its own or a rental bus, the drivers must have the appropriate driving licenses. Smaller groups may travel in rented vans or private automobiles.

The best way to transport canoes or kayaks is on a trailer designed for that use. Make sure the boats are securely fastened with straps, bungee cords, or lines. Such trailers often have lockers for life jackets and paddles. If not, those are packed in the tow vehicle. Make sure that the tow vehicle and hitch are rated for the trailer and that the trailer meets all legal requirements such as lights, license, and safety chains. You should carry a spare tire for the trailer and an appropriate jack.

It is also feasible to car-top canoes or kayaks for a small group. Pipe racks on pickups can often be used as is, but standard luggage racks on vans and SUVs are seldom designed for hauling boats, particularly two canoes side by side. You may be able to order special attachments from a dealer. Alternately, removable racks can be purchased. Some less-expensive models are generic and can be adjusted to fit many vehicles. Higher-end racks are tailored to fit specific automobiles. It is important to obtain a good-quality rack that is held securely to the vehicle. At highway speeds, the wind resistance on the boats creates large forces. Foam blocks and other temporary arrangements may be sufficient for transporting a new boat slowly from the store to a garage, but are not recommended for long distances at highway speeds.

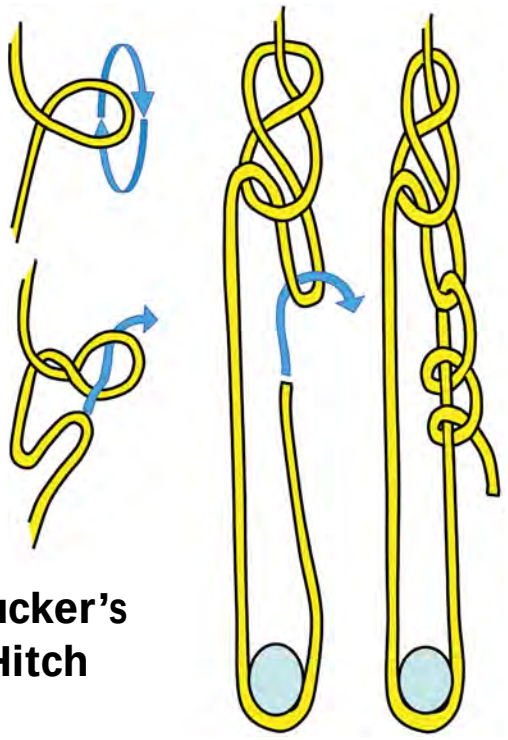
The boats should be balanced on two racks that extend across the top of the automobile. If necessary, adjust the racks so that the end of the boat toward the front of the car is level or slightly down. The wind needs to part along the sides of the boat, not catch it from beneath. Canoes are loaded upside down; kayaks may be loaded either way, based on design. Some kayak racks have J attachments that rest kayaks on their sides. Secure the boat or boats to the racks using cam straps, bungee cords, or lines using a trucker's hitch. The lines should be tight and secure, but be careful: it is possible to tighten hard enough to damage the hull.

The lines across the racks keep the boats from sliding sideways and also help hold the boats down against aerodynamic lift. However, all but the shortest boats also need lines front and back for adequate security. Use rope or straps for these, not bungee cords. Ideally, the fore and aft lines should slant in opposite directions to hold the boats in place not only against the wind while moving forward, but also against sliding forward when braking.

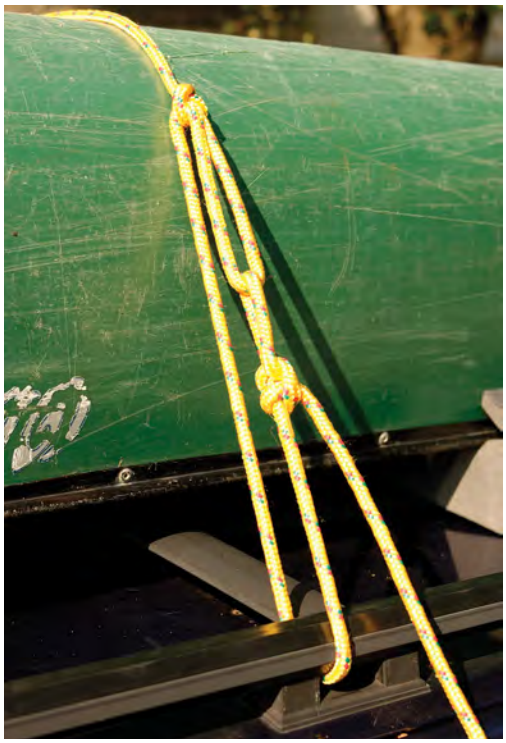
Tie either the middle of a single line or two separate lines to a secure attachment near the forward end of the boat, normally where you would tie a painter to a canoe or to the grab loop on a kayak. Angle the lines down to the front of the vehicle to form a V. Old-fashioned metal bumpers offered several attachment options that are not available on newer plastic bumpers. Attach the ends of the lines to tow hooks or other secure spots on the frame beneath the bumper. Avoid sharp edges or moving parts. Alternately, you may be able to attach tie loops under the hood and still be able to shut the hood securely. Pull the lines snug, but not too tight, with trucker's hitches. Cut or secure loose ends to keep them from flapping against the car finish or getting caught in moving parts. Make another V in back.

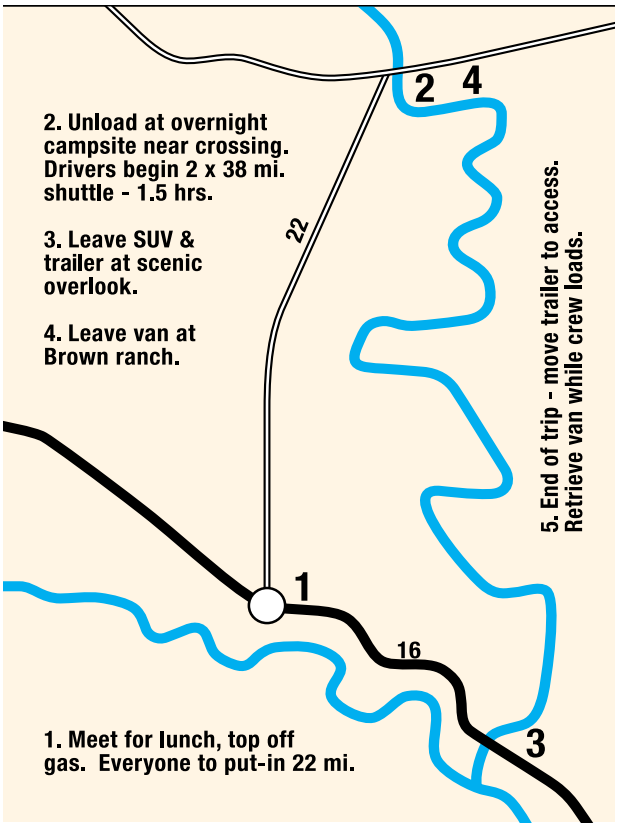
On lakes, it is common to plan a circular trip that ends where it began. On rivers, it is common for the starting point to be upstream of the takeout. That difference requires a shuttle to get land transport from one location to the other. There are two easy ways to do it: (1) pay a reliable outside party to run the shuttle, e.g., a livery that includes a shuttle service as part of the package; or (2) have extra adults along willing to follow the party by road. Other options need careful planning and may involve several trips along the same road to reconnect gear, people, and vehicles. **Do not leave the shuttle to chance.** Hitchhiking is dangerous and unreliable, and transportation at the takeout is useful in case of an emergency.

A shuttle requires at least two vehicles. Dropping a vehicle at the takeout on the way to the put-in is a good option if the entire party and all the gear fit in the remaining vehicles. At the end of the trip, the majority of the party waits at the takeout while the drivers are taken to the start and then return. Make sure there are enough leaders to maintain adequate supervision and to satisfy Youth Protection policies for both groups whenever the party is split.



Trucker's Hitch





If all the vehicles are needed to transport people and gear, then the entire party goes to the put-in and unloads. Then two vehicles are driven to the takeout. One vehicle is left and both drivers return. When the party leaves the river, a double trip is required again.

For extended river trips, a round-trip shuttle may take several hours, particularly if there is no direct road between the put-in and takeout. It the party does not reach the put-in or takeout early in the day, an overnight camp may be necessary. In remote areas, make sure to maintain sufficiently full gas tanks to complete the legs. On many rivers, common access sites are on public rights-of-way at bridge crossings, so shuttle vehicles are often left near bridges or low-water crossings. Although that practice is fairly common among river runners, it risks the vehicle to theft and vandalism. A safer bet is to launch and land at established campgrounds. If a vehicle is left near a bridge, make sure it is above the high-water mark. Some folks are fearful of losing car keys on the river and will hide the keys near the vehicle, but you never know who is watching. It makes better sense to carry two sets of keys down river in separate boats.

Float Plan

Once the waterway segment is decided on and other details considered, such as how to run the shuttle, it's time to plan a detailed itinerary. Folks who have run the river before are valuable resources. If you don't have such a person in your party, see if there is someone else around willing to offer advice based on personal knowledge.

Good maps make planning the itinerary easier. River maps in guidebooks or off the internet may be only sketches. Highway maps are typically at too large a scale to show useful back roads and don't reliably track all the bends in the river. County road maps are good for the back roads, and topographic maps help spot campsites and emergency exit routes. In lake country, try to find a map that shows portage trails. For sea kayaking along the coasts, get charts for the water and maps for the land. Maps and charts in GPS navigation systems may or may not have the needed detail depending on the location and the data loaded.

The itinerary is part of the float plan, along with emergency contact information and contingencies. Refer to the sample form at the end of this chapter.

What to Take

What to take depends on the location, the duration, and the time of year. The following lists provide reasonable guidelines, but temper them with local knowledge and common sense. Camping from a boat is not that different from camping on a backpacking trip. For some trips you will need a heavy-duty sleeping bag; for others, a lightweight bag will suffice. In some areas, you may be concerned with bears; in other areas it may be alligators. Although gear capacity is limited in some kayaks, canoes and touring kayaks generally make it easier to carry more gear than on a backpacking trip. Even so, take enough to be comfortable, but don't pack gear you will never touch. Always follow Leave No Trace principles. Check the Scouting America *Fieldbook* for information on camping and the Leave No Trace program.

Paperwork: Group and Individual

- Copies of the float plan
- Route maps
- Permits
- Identification (passports for foreign travel)
- Medical records with treatment consent
- Fishing licenses
- Cash and credit cards

Boats

- Life jacket sized for each occupant
- Paddle sized for each occupant
- Sponge, bailer, or pump
- Throw bag
- Painters
- Portage yoke if much carrying is anticipated
- For white water, add float bags and a helmet
- For cold water, add gloves and a wet suit

Group Equipment and Provisions

- Extra paddles
- First aid kits
- Emergency communication devices (cell phones, radios) with extra batteries
- Weather radio (hand-cranked versions available)
- GPS system
- Emergency beacon
- Repair kit (duct tape at least)
- Packs or gear bags with waterproof liners
- Miscellaneous straps and cord
- Tents, with ground cloth
- Medical histories with treatment consent
- Fishing licenses
- Dining fly
- Drinking water/water purification system
- Food
- Ice chest for short-term storage of perishable items
- Cook kit
- Butane lighters or waterproof matches
- Stoves and fuel*
- Cleanup kit (biodegradable soap, sanitizing rinse agent, trash bags)*
- Toilet paper with pack-out kits as appropriate*
- Small trowel*

*Leave No Trace

Personal Gear

- Medications
- Whistle (attached to life jacket while on the water)
- Pocketknife
- Water bottle
- Compass
- Sun protection (hat and sunscreen)

Personal Gear (continued)

- Sunglasses (prescription, if needed) with strap
- Insect protection (repellent; head net in some cases)
- Rain gear (hooded jacket and pants—no ponchos!)
- Stout, no-slip footwear that can get wet and will dry quickly
- Shoes for camp wear
- Swimsuit or quick-dry shorts
- Change of clothes appropriate for season
- Light jacket or layers in cold weather
- Toiletries
- Eating utensils (bowl, cup, spoon)
- Sleeping bag
- Sleeping pad
- Flashlight
- Camera

How to Pack

The challenge when packing for a float trip is to keep things dry. Water easily finds its way into any opening. For a short day trip, a 5-gallon plastic paint bucket with a sealing lid, available empty at discount outlets, makes a reasonable container. It has enough space for lunch and essentials, and is light, waterproof, and inexpensive. If you like, take off the handle and thread a light line through the hinge for tying to a thwart. If the canoe capsizes, the bucket can be cast free—it will float with a reasonable load.

A bucket, or any other secure container, is difficult to open and close quickly while under way. Waterproof items you need often, such as sunscreen, are better kept in a simple hip pack that can be tied to a thwart. An underwater camera housing is useful if you want to take snapshots without jeopardizing an expensive mechanism. Some digital cameras have enough water resistance to shake off an occasional splash with no ill effect.

For overnight excursions you can use conventional packs, either with or without a frame. Cook pots need no additional protection, but food, clothes, and sleeping bags do. Individually bag items in zip-lock or heavy-duty plastic garage bags, and then place those within a larger bag. Leave enough room to make a twisted, fold-over gooseneck that can be secured with rubber bands. Make sure to carry plenty of folded spare bags and rubber bands since rips are common. Pack food in clear bags so contents are visible after the outer bag is opened.

You can also purchase special gear bags with various waterproof, or near-waterproof, closing mechanisms, but double layering is still useful for critical items. Special containers fit the spaces beneath kayak hatches easier than generic backpacks will fit.

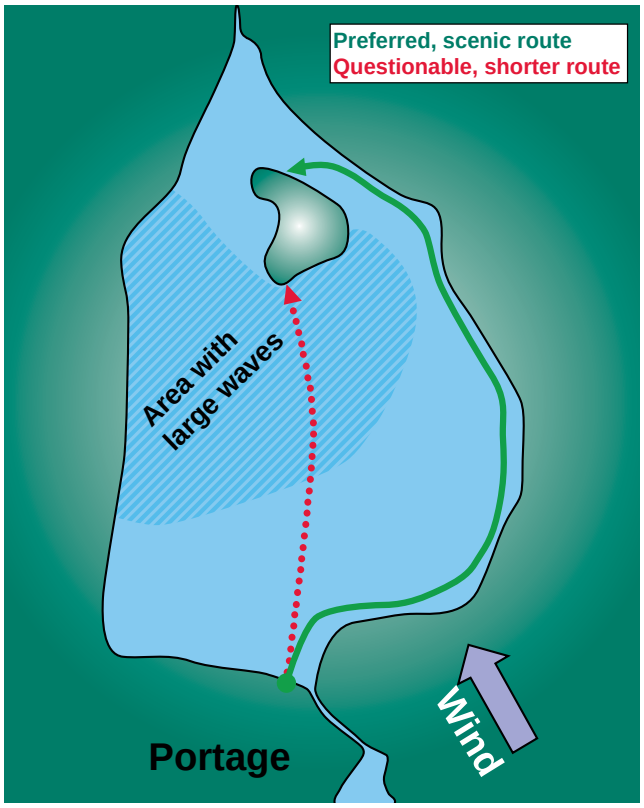
Once the gear is secured in waterproof containers, place the items in the boat. In a canoe, place the gear on the bottom in the center. Balance the load so that the canoe, paddlers included, stays in trim both sideways and fore and aft. Tie the gear in, particularly any item that doesn't float well, so it is not lost during a capsize. Gear secured well will displace water in a swamped canoe and help float the boat higher. On the other hand, a complicated tie-in system can make it more difficult to empty a swamped canoe.

A cruising canoe can hold an amazing amount of gear, as shown in the photo on a previous page. Like to cook in a Dutch oven? There's plenty of room to carry one. However, if your trip involves reaching your destination by float plane, portaging from lake to lake, or moving gear on steep, rough trails around rapids, keep the number and weight of the items small enough that everything can be carried in one trip.

On a backpacking trip, hikers typically carry individual packs. On a canoe trip, it often makes sense to share a pack. That allows one person to portage gear while the other carries the canoe. Split critical group supplies, such as food, between boats. If a boat is lost, including its share of the gear, the group should still be able to continue, although on a shorter schedule, perhaps.

On the Water

Planning needs to include procedures used on the water. Buddies in tandem boats should be matched according to size and skill as well as compatibility. Size is a consideration for proper trim. Pairing those with lesser skill with more experienced paddlers will keep the group moving efficiently while providing valuable training. Buddy boat assignments for solo craft should also pair experienced paddlers with novices. However, make sure the lead and sweep boats have experienced crews. It is particularly important to have someone familiar with the route in the lead boat. A missed portage trail or scouting location could lead the following boats into hazards.



If possible, plan a route that follows the shoreline rather than striking long distances across open water. If a long-distance, open-water segment is desired, for example to reach an island campground, review local and approaching weather patterns before leaving shore. Either wait or take a contingency route if facing strong winds, high waves, or strong currents. Be leery of leaving a shoreline with the wind at your back. While such a wind will help push you in the desired direction, it may also cause increased offshore wave action that makes the path ahead hazardous and the return path to safety increasingly difficult.

When planning a long trip with several portages, try to arrange the route so that longer portages come after the group becomes conditioned on shorter runs. Plus, the weight of food decreases as the trip progresses. Make sure to allow extra time in the itinerary for long or difficult portages.

When stopping at a campsite, make sure to secure all boats against changes in wind or water levels during the night. Normally, that means bringing them completely ashore. Minimalist campers may use the canoe itself as a shelter. An overturned canoe balanced on rocks serves as a makeshift table for food preparation.

Sample Float Plan *(Different formats may be used, but should include all relevent information.)*

MEMBERS	**AGE**	**Check if currently trained in:**			
		Safe Swim Defense	**Safety Afloat**	**CPR**	**First Aid**
Trip leader:					
1. _____	_____	[ ]	[ ]	[ ]	[ ]
Assistant leaders:					
2. _____	_____	[ ]	[ ]	[ ]	[ ]
3. _____	_____	[ ]	[ ]	[ ]	[ ]
4. _____	_____	[ ]	[ ]	[ ]	[ ]
Youth members:					
5. _____	6. _____				
7. _____	8. _____				
9. _____	10. _____				
11. _____	12. _____				
13. _____	14. _____				

ITINERARY

Date:	Start at:	Via:	Overnight:
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

CONTACT INFO—Names and numbers or radio info for:

Party _____

Emergency services _____

Emergency contacts _____

TRANSPORTATION

Automobiles:		Boats:	
Number	_____	Number	_____
Type	_____	Type	_____
License	_____	Registration	_____
Parked at	_____	Rented from	_____

NOTES

_____

_____

Carry float plan with health histories, consent forms, and required permits. Leave copies with contacts.

Chapter 23

Rowing

Traditionally, oars were the primary motive power for small craft for a wide range of commercial and recreational activities such as fishing, ferrying, bird hunting, and tending larger vessels. The advent of small outboard motors has almost made rowing a lost art today. Basic rowing skills are still advantageous, however, in several situations. Many youth are attracted to rowing as a fun activity because they are interested in boats of all kinds.

Boat Designs and Use

Although many excellent rowboat designs are still manufactured, those tend to be of limited production and expensive. Most small craft outfitted with oars are actually designed for small outboard motors. The back seat will be positioned forward of the transom to allow space for a fuel can and to allow better trim and tiller control. Oarlock sockets may not be positioned correctly for easy rowing. Compared to a dory or other classic design, the typical small powerboat under oars may seem sluggish but will generally perform well if the oars are correctly sized.

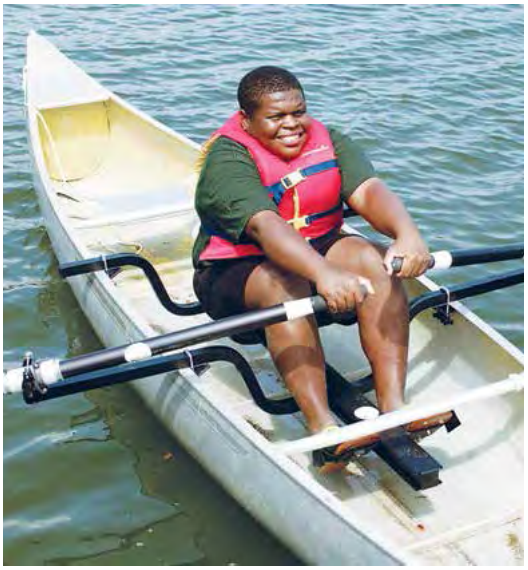
Conventional Rowing. Rowing is a useful skill when using small boats as tenders to cruising sailboats, as guard craft during unit swims, or to move quietly from one fishing spot to another. Rowboats are suited for such purposes due to their carrying capacity and stability, particularly in waves. In some countries, properly designed and equipped rowboats are offered for hire in public parks.

Sliding-Seat (Competitive) Rowing. Competitive rowing is typically sponsored by schools and clubs. A local rowing club may provide resources for Scouts to try the activity. Sliding-seat rowing provides excellent whole-body aerobic exercise, and there is joy in how easily a long, slender craft glides through the water. However, most such craft are not well suited for much beyond rowing in a straight line on calm water. Only a few sliding-seat designs are available for transporting people and gear on trips.

Dories. Dories are used on for running whitewater and drift fishing, particularly on western rivers. Running rapids in any craft requires specialized skills. Youth groups should normally ride as passengers in such craft with the rowing done by an experienced guide.

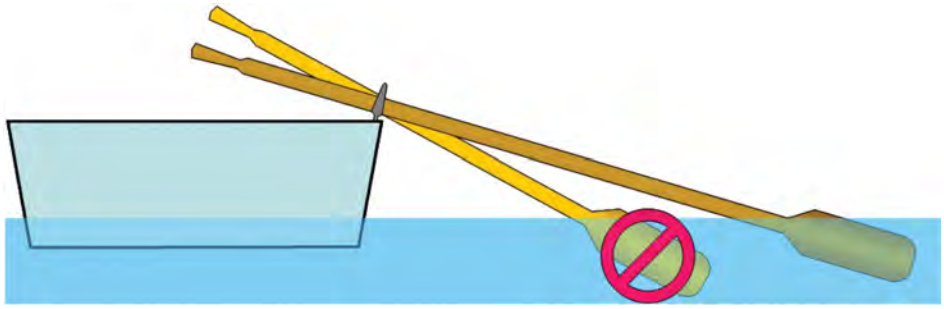
River Rafting. River rafting is discussed in Chapter 21 as a means by which youth groups without specialized skills can experience white water. Oared rafts are also used as support craft for kayaking groups.

Additional information on all aspects of rowing is provided in the Rowing merit badge pamphlet.



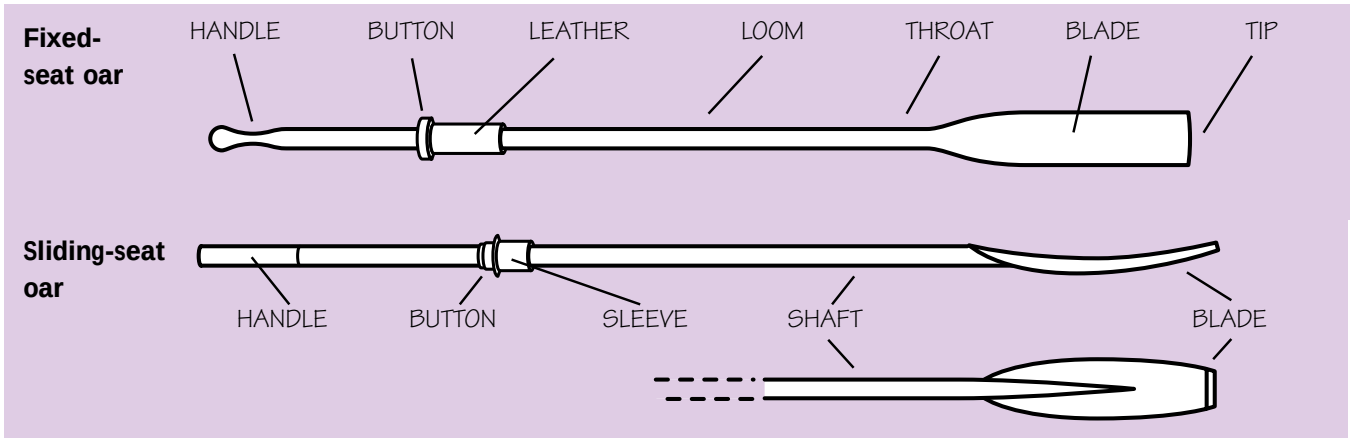
Oars

Probably the greatest impediment to easy rowing is the tendency to use oars that are too short. Oars must be sized to the boat, not the rower. That is, a Cub Scout will find it harder to row a wide-beamed boat with short oars than with long oars. Typically, oars need to be 7 to 8 feet or longer, but unfortunately the sporting-goods departments of large chain stores will often only stock 6-foot oars. Therefore, you may need to special-order the correct size oars for your boat. Be aware that price increases with length.



Correctly sized oars resting in the oarlocks should float with the blades in the water and the handles meeting amidships at belly-button height of a person centered on the seat. The correct oar length will increase with beam width and freeboard height. If the oars are too short, they will dig too deep in the water, pop out of the lock, and force the rower to position the hands either too high or too far apart for efficient rowing.

Buttons on oars are not essential but do help keep the oars positioned, while the rower is reaching for a flotation device to throw to a swimmer in distress, for example. Oars with buttons typically also have sleeves or leathers to protect the oar from wear on the oarlock. Traditionally, buttons and sleeves were made from leather held in place by stitching or tacks, but rubber and plastic versions are available. The button should rest slightly inboard of the lock when the oar is in use.



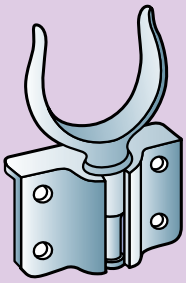
Oarlocks

The next key to effective rowing is a proper oarlock. Folks attempting to row with oars that are too short tend to favor locks, such as clamps and pins, that hold the oar to the boat. An oar that is too short will tend to pop out of an open-top oarlock. Open-top or ring locks are preferred since they allow the oar to feather. Again, these may be special-order or internet shopping items. The typical sporting-goods department may stock only the inferior styles, if any.

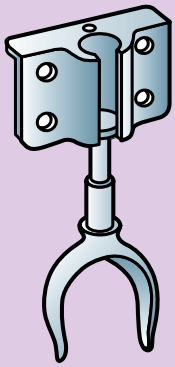
The socket for the lock should be located approximately forearm or thigh length aft of a rower sitting upright on the seat. The lock should be secured to the socket with a chain or lanyard so that the lock can be lowered when people are getting in and out of the boat. Alternately, a ring lock may be left on the oar beneath the button, or a self-contained Davis lock may be used.

Note that other styles of locks are used with sliding-seat and raft rigs.

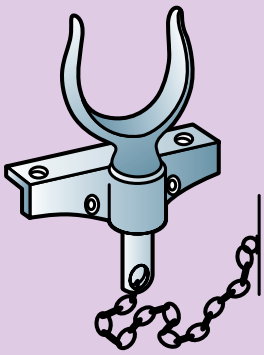
Davis (rowing position)



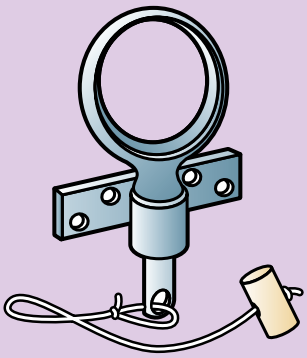
Davis (safety position)



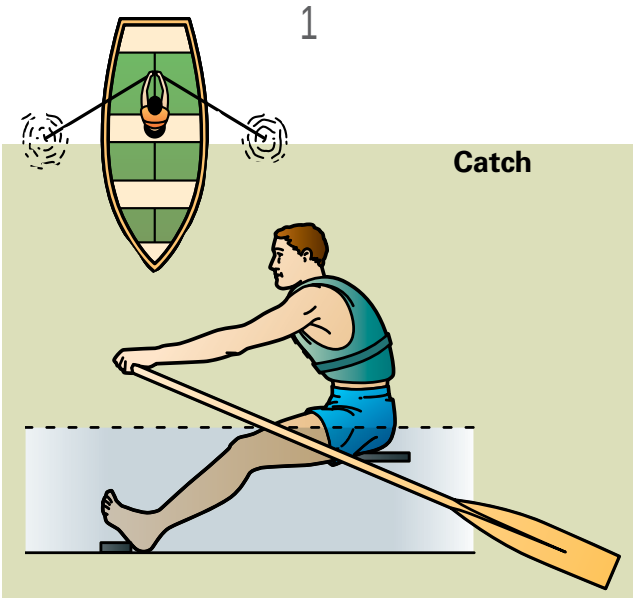
Open



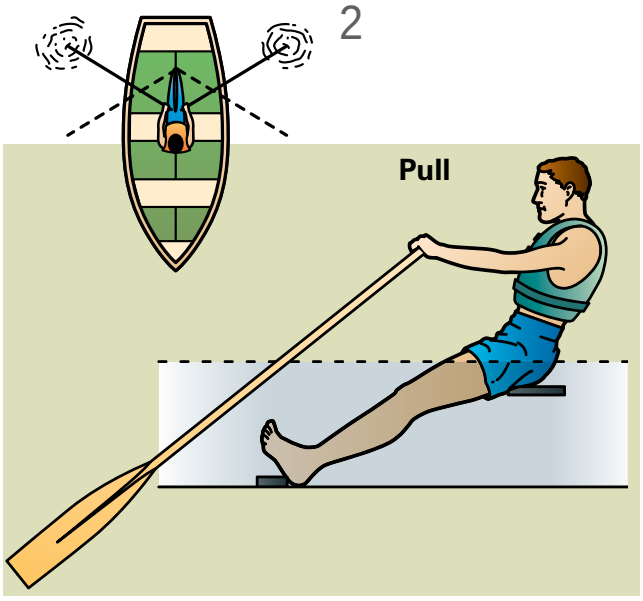
Ring



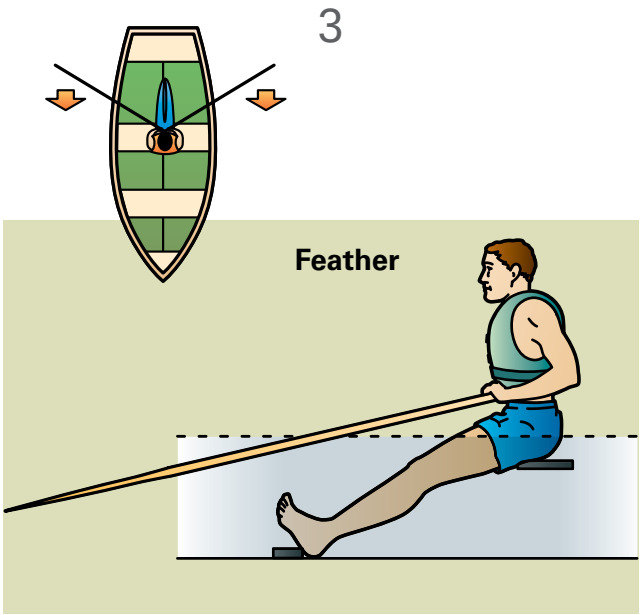
Moving Forward



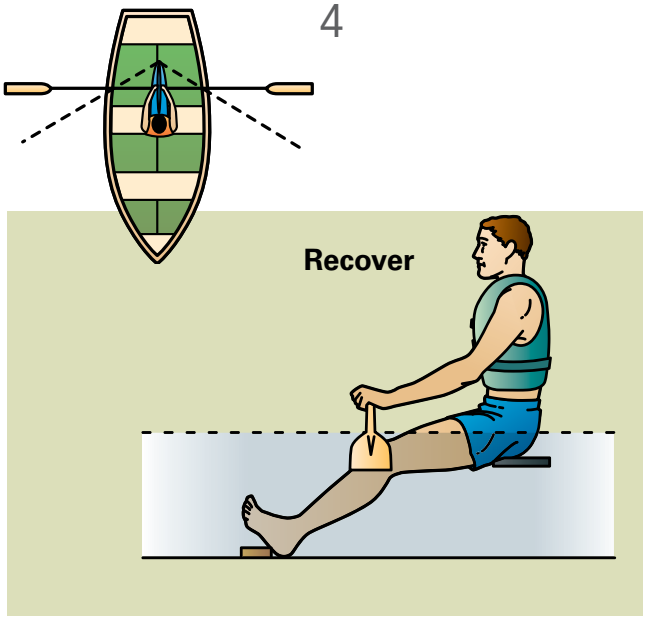
Catch. Facing aft with blades clear of the water, lean toward the stern with arms stretched forward. Drop the blades into the water edgewise.



Pull. Brace your legs and sweep the blades aft by first leaning back with arms straight, and then finish with elbows next to your sides.



Feather. Rotate the blades almost flat to the water by rolling the wrists down. Feathering prevents wind and wave resistance during the recovery.



Recover. Return to the catch position by leaning forward with the blades feathered just above the water (or skipping across the surface if there aren't any waves).

Moving Backward

Catch. Angle the oars slightly aft by pulling your hands to your belly with your elbows at your sides. Drop the blades into the water edgewise.

Push. Lean aft and straighten your arms to sweep the blades toward the bow. Finish with arms extended aft.

Feather. Rotate the blades almost flat to the water by rolling the wrists up. (Your hands twist in the opposite direction to the forward stroke.)

Recover. Pull back on the oars to return to the catch position with the blades feathered just above the water (or skipping across the surface if there aren't any waves).

Stops, Turns, and Pivots

To stop, hold water with the blades submerged, or reverse the stroke slightly.

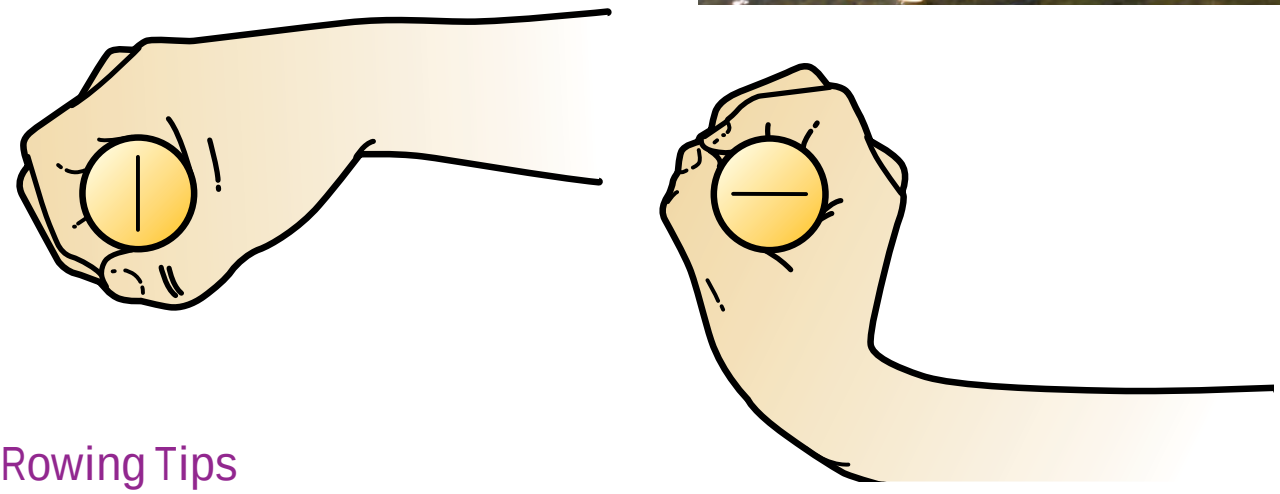
To turn under way, pull harder on one oar than the other.


Pivot-catch


Pivot-push-pull

To pivot, or spin in place, row forward with one oar while backing water with the other.


Pivot-feathering



Rowing Tips

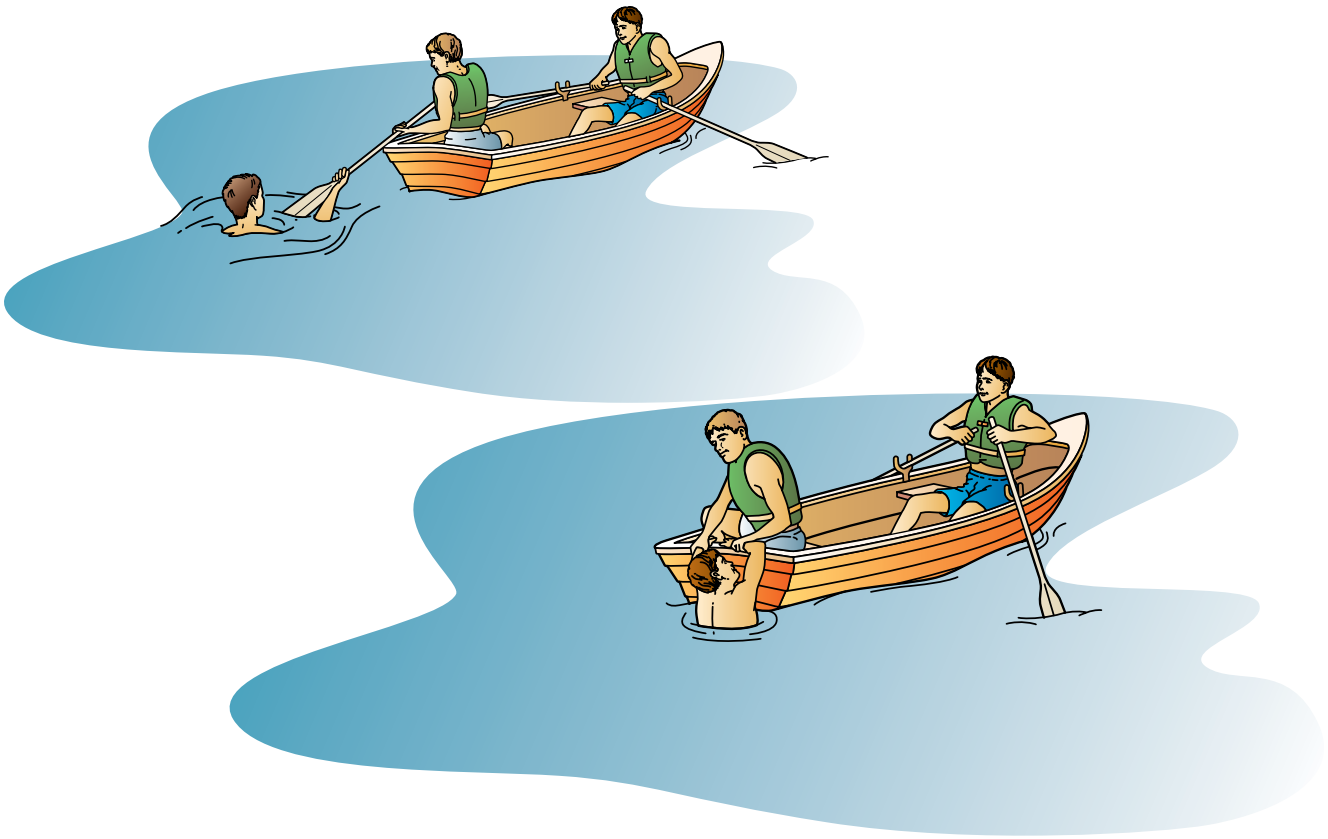
Common errors can be avoided by imagining that you slide your hands within a narrow, flat track or "groove." Keep the grips close together with your elbows down. Having your hands too far apart reduces your leverage against the oarlock. Minimize vertical movement to prevent "**windmilling**." If you push your hands down while feathering, you waste energy lifting the blades too far out of the water. If you raise your hands during the catch and pull, the blades go too deep into the water and you are likely to pop the oar out of the lock. Be careful during the recovery to keep the leading edge of a feathered blade tilted slightly up. Otherwise, the blade will dive into the water if you try to skim the oars or catch a bit of wave chop. The reaction of a diving blade, called "**catching a crab**," may be strong enough to knock you from your seat.

Additional tips on oar length, boat trim, maintaining course, sculling, sliding-seat rowing, and other subjects can be found in the *Rowing* merit badge pamphlet.

Swimmer Assists

Rowboats used as guard craft at a unit swim should be positioned at the perimeter of the swimmer area and crewed by a buddy team equipped with rescue aids. Distressed swimmers can be thrown a flotation aid as the rower backs water to allow the person to grasp the transom. A reach pole or an extra oar may be used as a reaching device. Incapacitated swimmers are held at the back of the boat by the coxswain as the rower moves the boat quickly to shore. If the boat is a long distance from safety—for example, guarding a snorkeling party near a reef—the victim can be lifted over the stern of some boats if rescue breathing/CPR is needed.

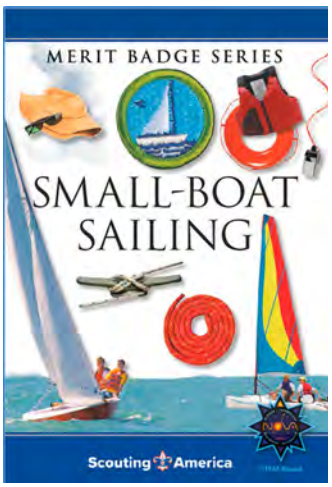
If rowboats are used to protect long-distance swimmers in open water, such as for the Mile Swim, then Scouting America policies state that the swimmer is followed by a rowboat with both a rower and a spotter.



Chapter 24

Sailing

Sailing is a popular recreational activity that is fun, healthy, and challenging. Many of today's youth are keenly interested in sailing but may have little access to boats and little opportunity to learn sailing skills. Scouting programs address that gap and provide sailing opportunities in more than one format in boats of various sizes. Some focus on the individual, others on the unit. This chapter addresses program opportunities rather than specific sailing skills. Basic sailing skills are covered more thoroughly in the **Small-Boat Sailing** merit badge pamphlet.



Small-Boat Programs

The Small-Boat Sailing merit badge is designed primarily for the individual Scout and their buddy using small craft with limited crew capability. Scouts can earn the merit badge from local counselors and at many council summer camps.

Some Venturing crews and Sea Scout ships specialize in sailing as one of their primary activities. The following elements should be considered for such programs:

- Sailing for pleasure with competition as an option
- Learning by doing
- Using youth members as counselors aided by volunteer consultants
- Maximum time on the water with a minimum of lectures
- Visual aids and simple instructional materials to support learning
- A series of sailing exercises and drills to add fun to skills practice
- Competition with those of like ability with emphasis on fun rather than winning

Professionally Crewed Day Trips

Several large sailing vessels offer scheduled day trips for the general public from various ports on the coasts and the Great Lakes. These offer a fun introduction to large-boat sailing to Scouting America members of all ages and abilities and can accommodate large groups if prearrangements are made for a block of tickets. However, the group will be passengers with limited opportunities for learning skills. Make sure the captain and the vessel have current U.S. Coast Guard credentials.

Captained Charters

An active industry of large and small companies provides crewed boats for hire for typical terms of one to two weeks. The crew may consist of only a captain or include a mate/cook. Patrons can leave everything to the crew or operate the vessel under supervision. Fees and availability may vary by season. Summer is the prime season in northern waters around Maine and Vancouver. In southern waters, particularly the Caribbean, summer is the off season due to heat and potential hurricanes. Typically, group size is limited, around four to eight, but some larger vessels are available. Catamarans may accommodate larger numbers than a monohull of the same length.

While there are many well-maintained boats with reputable captains willing to work with Scouting groups, there is also the potential for a bad experience, particularly when booking sight unseen months in advance. An easy way for a unit leader to vet a boat and crew is to book the trip through the Scouting America National High Adventure Sea Base or through council high-adventure bases that offer similar opportunities. A few vessels are available for groups of 20 or so.

Bareboat Charters

Boats may also be hired without a crew. That frees space aboard for other unit members but also places greater responsibility on the unit leader. Before renting boats, charter companies generally require proof of sailing competency. If you don't qualify, some will provide a captain for an additional fee. You will need experience on larger boats to qualify. One way to gain that experience is through a keelboat training program. There are numerous sailing schools affiliated with organizations such as US Sailing or the American Sailing Association whose training programs are recognized, or required, by charter companies. Information on sailing schools and charter companies may be found in *SAIL* magazine and on the internet.

Many charter companies restrict sailing to daylight hours within sight of land. Those are good guidelines for any amateur skipper and crew.

Cruising Checklist

Not all charter companies require the same experience, and a unit may also have the opportunity to use a private vessel on a local lake skippered by a member's parent. The following checklist of gear and skills may be used for a self-assessment. Details will vary depending on the type of vessel and the cruising area, but a lack of comfort in any pertinent area is a flag that needs additional review. A similar list should be reviewed with a charter company before accepting a vessel.

Rigging:

- ☐ Standing rigging (stays, shrouds, spreaders, lifelines, etc.) in good condition and properly adjusted.
- ☐ Running rigging in good condition and understood. Operation of every line, cleat, and winch is clear and it is obvious how to:
  - Raise, lower, and reef the main, including any roller reefing or topping lift
  - Raise, lower, or roller furl the jib, including whether the furling system can be used to reduce sail
- ☐ Ground tackle should include at least two anchors and rodes.

Mechanical Systems:

- ☐ Rudder operation checked. Wheel has centerline indicator.
- ☐ Swing keel operation reviewed.
- ☐ Operation and basic maintenance of the auxiliary engine is clear (start, throttle, neutral, engaged).
- ☐ Engine compartment clean (to allow easy determination of new fuel, oil, or water leaks).
- ☐ Cooking system operation and safety precautions reviewed.
- ☐ Fire extinguishers easily accessible for either engine or cooking fires.
- ☐ Bilge pump operational; manual backup system available.
- ☐ Freshwater system reviewed (capacity, pump operation, level indicator, cutoff valves, filling procedure).
- ☐ Fuel system reviewed (fuel type, capacity, level indicator, cutoff valves, filling procedure).
- ☐ Head and shower operation reviewed, including holding-tank capacity and emptying.
- ☐ Dinghy checked (towing or storage system, outboard operation and maintenance, repair kit for inflatable).

Electrical/Electronic Systems:

- ☐ Is generator attached to auxiliary engine or separate?
- ☐ Battery system reviewed (charging procedure, bank usage, and switching).
- ☐ Shore power connections reviewed.
- ☐ Navigation and interior lighting system reviewed.
- ☐ Marine radio operation and procedures checked.
- ☐ Is there a system for weather forecasts?
- ☐ Depth-finder operation and alarm setting. Lead-line backup.

Mal de mer

The constant motion aboard a boat can unsettle the stomach and produce nausea or worse. Those who have problems with motion sickness in cars should seek medical advice before a sailboat cruise. Prescription medications are available. Over-the-counter pills may work for some sufferers. Just about anyone will show signs of seasickness if below deck in a hot, confined space when the boat is pushing through swells while heeling. Anyone green behind the gills should stay on deck in the fresh air with a view of the horizon. A turn at the wheel or another task may help. Hopefully, the feeling will soon pass. However, anyone stricken with severe motion sickness should be monitored for dehydration.

Navigation Aids:

- ☐ Chart plotters up-to-date with clearly understood operation?
- ☐ Backup paper charts and magnetic compasses available?
- ☐ Binoculars supplied?
- ☐ Is there a local cruising guide with information on channels, anchorages, etc.?

Accommodations and Provisioning:

- ☐ Adequate sleeping space for all aboard, consistent with Youth Protection policies?
- ☐ List of personal gear provided to each unit member?
- ☐ Is food provided by the charter company, by the unit, or a combination?
- ☐ Are any perishable food items properly stored (icebox or refrigeration)?

Maneuvers

Is the skipper confident that supervised crew members can:

- ☐ Set and trim sails for all points of sail (tack, reach, and run).
- ☐ Come about.
- ☐ Plot a course to the next waypoint.
- ☐ Read channel markers.
- ☐ Follow rules-of-the-road when encountering other vessels.
- ☐ Quickly recover a person who falls overboard while under way.
- ☐ Quickly de-power, lower, and/or furl sails.
- ☐ Anchor, moor, or dock under power in potentially crowded anchorages.
- ☐ Anchor, moor, or dock under sail if auxiliary power fails.
- ☐ Manage adequately if skipper becomes incapacitated.

Float Plan:

The charter company should provide advice on:

- ☐ Local sights and activities, such as a good snorkeling location.
- ☐ Local regulations (e.g., fishing licenses) and customs.
- ☐ Good and bad anchorages.
- ☐ Tricky channels.
- ☐ Good restaurants for a treat and places to avoid crowds.
- ☐ Provisioning locations.
- ☐ Who to contact, where, and how, for minor and major emergencies.

Emergencies:

Discuss with the charter company:

- ☐ Major medical emergencies.
- ☐ Minor medical concerns (should have a first-aid kit adequate for removing fishhooks, etc.).
- ☐ Major vessel damage.
- ☐ Theft or other criminal activities.
- ☐ Running aground.
- ☐ Location and use of flares and other emergency gear.

Although basic sailing procedures are universal, different boats have different systems and will handle differently. The above checklist is for guidance only and does not substitute for experience. Nothing beats a short shakedown on the actual vessel or a sister ship. Someone confident in tight maneuvering of a 25-footer may still be intimidated the first time at the wheel of a 40-footer. Don't hesitate to inform the charter company of such concerns. They may offer to have, or insist on having, a representative aboard for a short time while you get the feel of the boat.

NOTE: Because most cruising sailboats have auxiliary power, skippers must also comply with all rules applicable to motorboats. Chapter 26 on motorboating provides additional guidance.

Chapter 25

Boardsailing

Forerunners of sailboards were experimented with around the 1950's. The equipment was patented and commercialized around 1970. The sport took off in that decade and the next and became an Olympic sport for men in 1984 and for women in 1992. It gradually declined in popularity but is perhaps now making a modest comeback. Hydrofoils were introduced at the 2024 Olympics.

Windsurfing is the popular expression used to describe the use of a **sailboard**, but that term was initially trademarked. **Boardsailing** was the generic alternative used when the activity became an Olympic sport. Boardsailing is fun, relatively inexpensive compared with some sports, and great exercise. It is also relatively easy to learn with the right equipment and conditions.

Sailboards can reach high speeds, ride huge waves, and even go airborne. When learning, it is very important to select the right equipment to learn the basics. An experienced instructor will make the effort much easier. US Windsurfing (www.uswindsurfing.org) provides information on courses and online tutorials. Some Scout summer camps offer boardsailing programs, and your local council may have a list of counselors for the Scouting America Boardsailing award. The Boardsailing award application is provided in Appendix 3.

The Board

Learning is easier with a board that has good stability and buoyancy. Therefore, start with a long, wide, thick board with a large volume. Avoid short advanced shapes with a narrow nose and tail until you have mastered the basics.

Less expensive boards made of molded polyethylene are tough but are heavier than more expensive boards made of various composites such as fiberglass, Kevlar, and carbon fiber. Some boards are inflatables.

The **nose** or bow at the front of the board is shaped to ride over small waves without diving.

The **tail** or stern always remains in the water (except for hydrofoils). A wide tail provides increased stability that allows you to move back on the board.

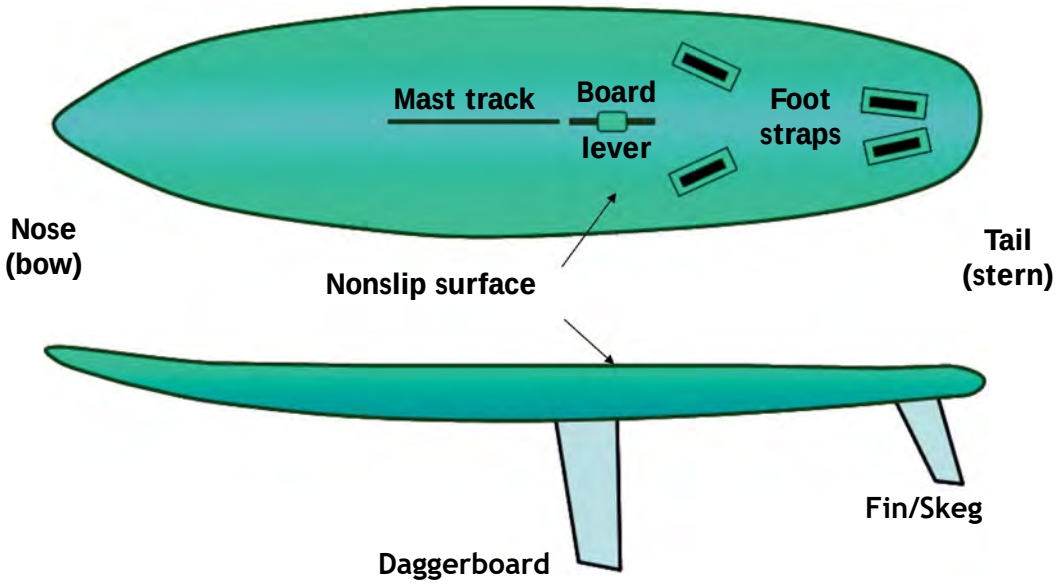
A small fin or **skeg** is attached on the underside of the tail to help tracking. Without it, the board would spin in circles.

A **mast track** or foot on the top of the board near the center holds the sailing rig to the board.

Aft of the mast track, most boards have a second, larger fin that helps the board point closer to the wind, similar to a **daggerboard** or **centerboard** on other sailing craft. There may be a lever handle on top of the board that pivots the blade up and down.

The tops of all boards should have a **nonslip coating** to allow you to stand on the board without slipping.

Many boards will have **foot straps** positioned aft on each side of the board. Foot straps are not needed for basic maneuvers. Beginners may want to forego using the straps initially.



The Rig

The **rig** consists of the sail and the spars that hold it in place.

The front edge of the sail is the **luff**, the back edge is the **leach**, and the bottom is the **foot**.

The **mast** is a rigid tube of metal or composite material that slides into a sleeve along the luff of the sail.

The **mast foot** at the bottom of the mast has a **universal joint** that attaches to the board's mast track. The attachment allows the rig to pivot in any direction.

A **safety leash** provides a backup connection to the board in case the mast foot fails. A rig attached to the board makes it less likely to blow away from a sailor dumped in the water.

The back of the sail is held away from the mast with a divided wishbone **boom** usually made of aluminum. The boom attaches to the mast with an adjustable **clamp** in a cutout in the luff sleeve. The boom is used to control the sail and has a textured grip on both sides of the sail. For best results, the boom should be positioned on the mast between shoulder and chin height.

The back corner of the sail, or **clew**, attaches to the back of the boom with a line called the **outhaul**. The bottom of the sail at the luff is the **tack** and is attached to the mast with another line called the **downhaul**.

The sail functions best when the downhaul and outhaul are properly tensioned to produce a smooth airfoil. Flexible **battens** running across the width of the sail help maintain the shape. Pulleys are used to gain sufficient tension in the downhaul to flatten the sail along the luff. The clew is tensioned sufficiently to keep the sail off the boom. Once pulled taut, the lines are held in place with various types of **cleats**.

The **uphaul** is a line attached to the boom that is used to pull the rig from the water into a sailing position.

If you buy a rig, it should come with rigging instructions, but the novice using a camp or rental board should rely on an instructor to provide guidance. For best results, the fullness of the sail can be adjusted, or **tuned**, based on wind conditions.

Sail designs vary with use. Racing sails are large, with a tall luff, a long boom, and a low foot. Wave sails used in the surf have a shorter luff and boom and a higher foot. Generally, beginners should start out with smaller sails. A sail that is too big for the wind conditions is difficult to control and tiring to use.

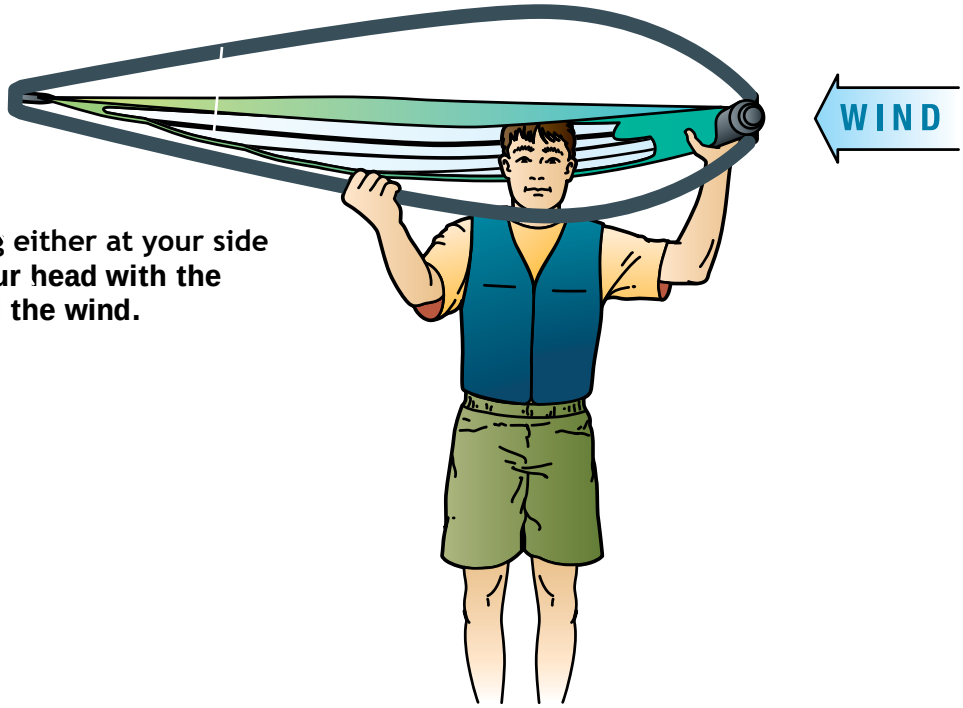
Moving to the Water

Initially you can rely on your instructor, but eventually you will need to learn how to rig the sail and move it and the board to the water, and attach the rig to the board. The illustrations provide pointers.

Before you start to sail, for the first time or the umpteenth, make sure your gear is ready: Double-check your life jacket and the rig, particularly the mast foot attachment.

Also check the weather and surroundings. Beginners should start in light winds (3 to 7 knots) and calm, uncrowded water. Do not launch into winds that are blowing offshore into large expanses of water.

Carry the board at your side, with one hand on the centerboard and the other on the mast track. Avoid turning broadside to the wind.



Carry the rig either at your side or above your head with the mast toward the wind.

Uphauling

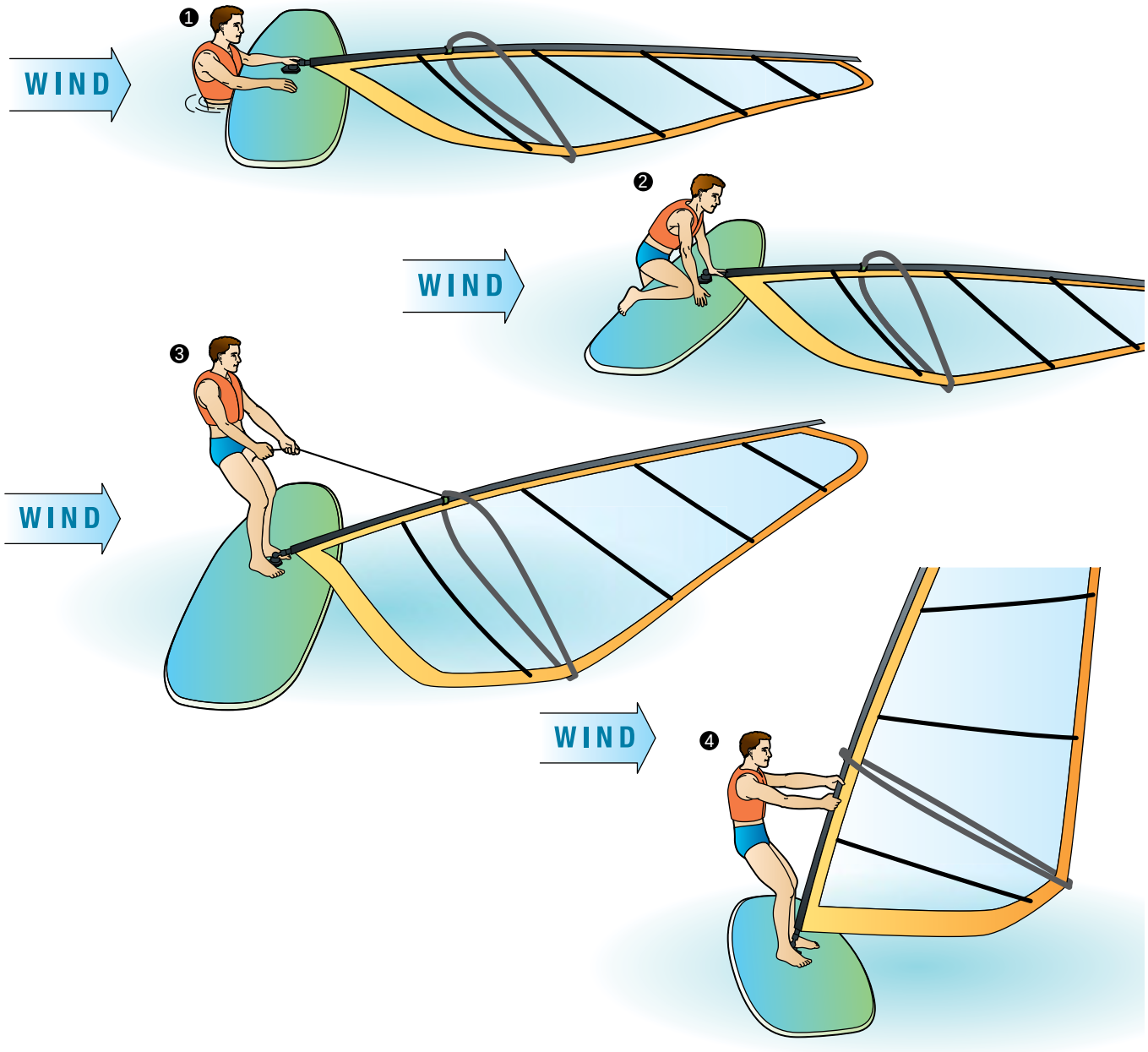
Start with the board sideways to the wind with the rig on the downwind side. Face the board with your back to the wind and one hand on each side of the mast.

Boost yourself into a kneeling position over the center of the board. When stable, crouch with your feet on either side of the mast along the centerline of the board, grasp the uphaul, and carefully stand up.

Keep your back and arms straight, with your head up. Push up with your legs and lean back to slowly slide the rig from the water.

Finish pulling the rig from the water until you can grasp the mast with both hands just below the boom. Don't pull the mast completely vertical. Your body and the mast should form a V. Your back should still be to the wind with the sail flapping, or **luffing**, loosely downwind. Your front foot should be against the mast foot, and your back foot should be on the centerline behind the mast about shoulder width from your front foot. This is the **basic** position.

From the basic position, you can pause by lowering the rig, turn the board, or move to a **sailing** position. If the board starts to turn, the rig is leaning either too far forward or aft. Tilting the rig in one direction will cause the board to rotate in the other direction.



Getting Under Way

Experienced sailors move seamlessly into a sailing position during the uphaul by grasping the boom near the mast with their forward hand while adjusting their stance. The boom is then grasped with the back hand and pulled in to catch the wind. The actions are firm, but the body is relaxed.

The beginner may wish to start with a more deliberate progression. From the basic position, release the mast with your back hand. Step aft with your back foot across the centerline and your front foot angled forward just behind the mast. That rotates your body toward the front of the board and allows you to look forward.

Shift the rig to maintain balance. The sail should still be luffing with the rig tilted downwind.

Next, place both hands on the boom about shoulder-width apart with your hands on top. Your forward hand will be slightly aft of the mast. Pull the boom in with your back hand by rotating your rear shoulder away from the rig. The sail will catch the wind and the board will move forward.

With the wind from the side, pulling in on the boom will increase the force on the sail. Letting out will decrease the force. Let go with your back hand to luff the sail if you start to lose control.

Stay relaxed and lean back gently against the pull of the sail. Keep your body and arms straight in the shape of the number 7. Look ahead.

As the board accelerates, you may need to make slight adjustments to your stance or where you grasp the boom to maintain comfortable control and trim. Experiment with different positions in a light breeze. Some boards will be more forgiving than others.

Signs of poor positioning include: shoulders in with hips out, feet across the board, bent arms, arms too far apart, and head facing the sail near the rig.

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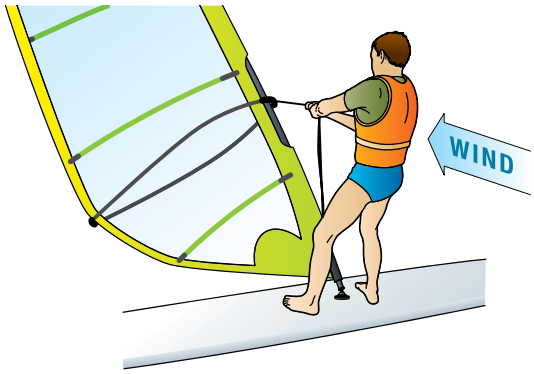

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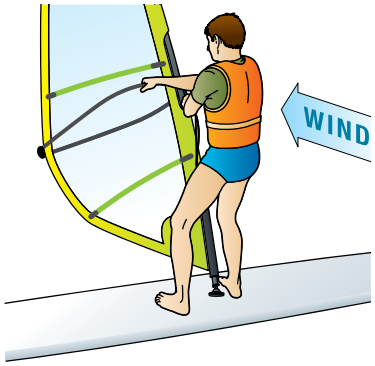

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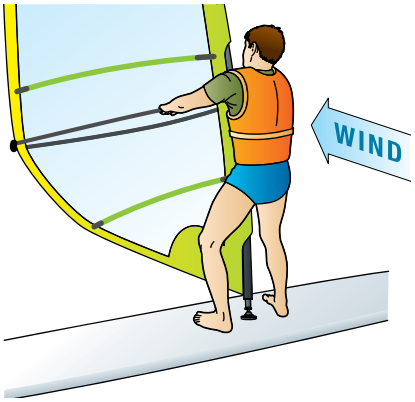

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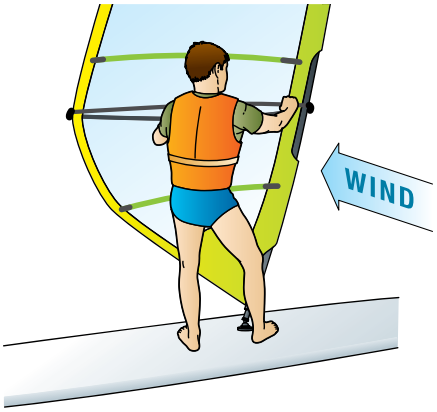

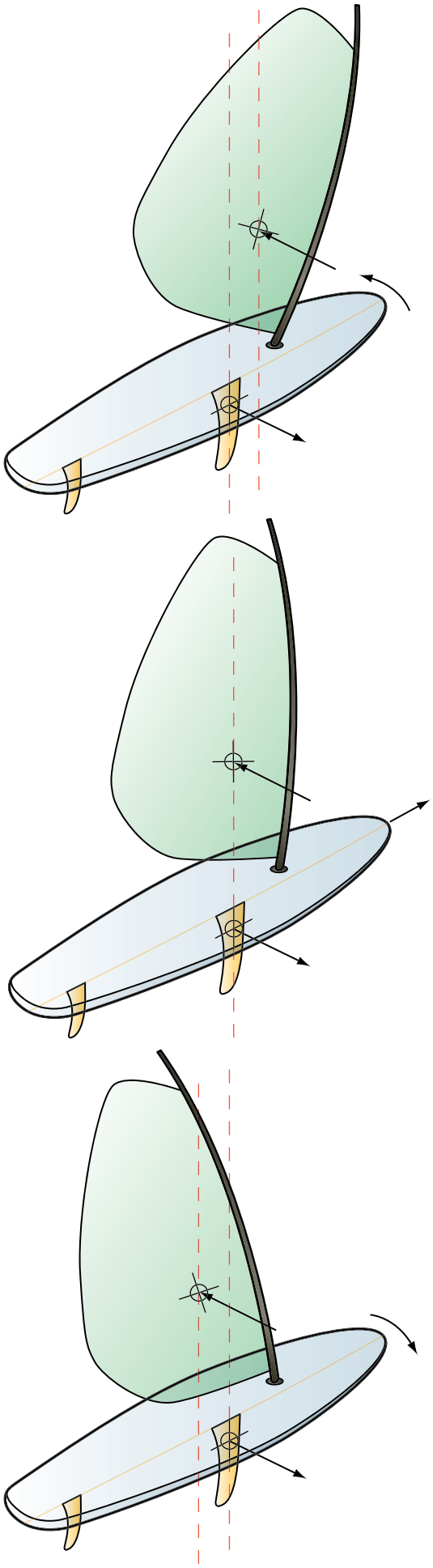

Steering

Since a sailboard has no rudder, steering is done by shifting the rig. When the wind strikes the sail at an angle, part of the force moves the board forward while part of the force tries to move the board sideways. Both force components act as if they were applied at a single point on the sail called the **center of effort** (CE). The sideways, or lateral, force is countered by the resistance of the water on the fins. The water resistance acts at a point called the **center of lateral resistance** (CLR). When the CE and CLR are directly above one another, there is a tendency for the board to heel that is countered by the sailor leaning to windward. However, the lateral forces are balanced and the board moves forward in a fixed direction. Tilting the rig forward shifts the CE ahead of the CLR, and the resulting moment of unbalanced forces causes the front of the board to turn with the wind. Tilting the rig aft shifts the CE behind the CLR, and the front of the board turns into the wind.

Turning Around

There are three different procedures for making major course changes or reversing direction. The board may be **tacked** by turning into the wind while under way. The sailor moves from one side of the board to the other by stepping around the front of the mast. Tacking is used to **beat** upwind and may also be used for reversing direction. Tacking is described in the next section.

Jibing is turning downwind while under way. The sail is flipped from one side to the other around the front of the board. Jibing is more difficult than tacking and will not be illustrated here because it is not required for the Boardsailing award.

The third procedure is done from the basic position with the sail luffed. The rig is tilted forward and the board rotated beneath it. This procedure should be learned during your first sessions on the board—it is vital that you know how to return to your starting point. The technique is also useful for aligning the board in the direction of desired travel when you launch. You will not always desire or be able to proceed perpendicular to the wind as the getting under way sequence assumed.

To start the turn, luff the sail to cut power. After the board slows, grasp the mast or the uphaul with both hands. Then shift the rig so that it points toward the bow (actually, the board rotates under the rig).

As the board turns, keep one foot on each side of the mast and take small steps to turn the board as you continue to face the mast.

Once the board is pointing in the desired direction, return to the sailing position and adjust the boom for power.

Tacking

To turn without stopping, turn the board toward the wind. Grasp the mast with your front hand, lean the sail aft, and step forward across the board with your front foot.

As the board turns through the wind, grasp the mast with both hands and step forward with the back foot to face the rig. Twist around the rig on the balls of your feet, bring the mast upright, step back, grasp the boom, and resume a sailing position on the new side.

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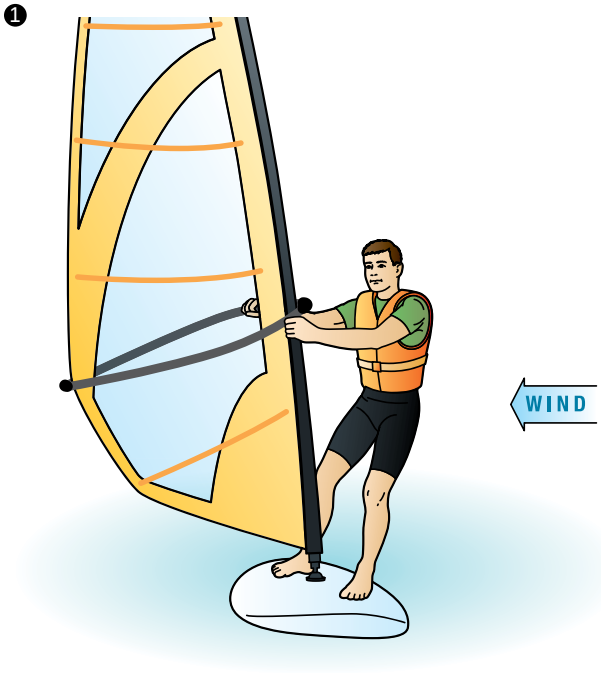

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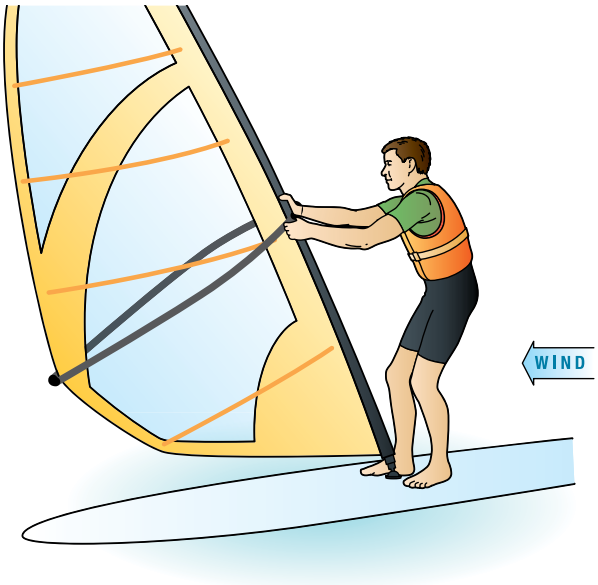

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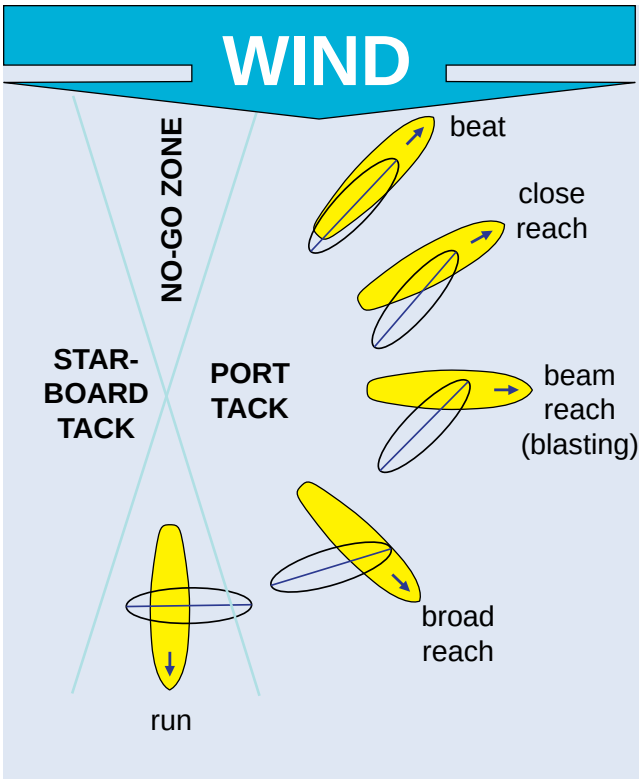
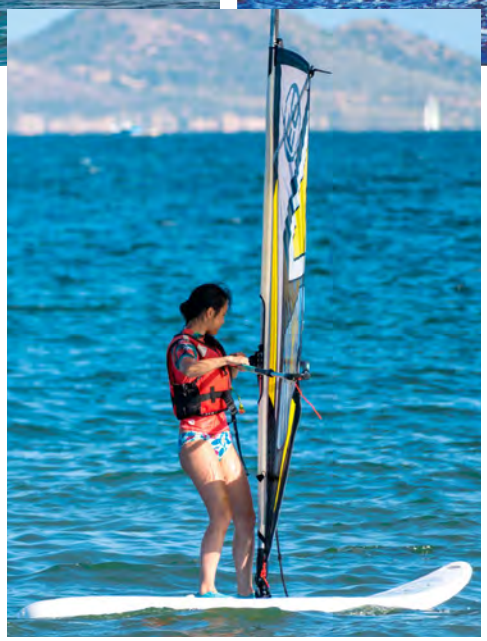
Points of Sail

The angle of the sail to the wind and the board depends on the heading relative to the wind. The board cannot travel directly into the wind. With the boom pulled parallel to the board, **sheeted in**, turn into the wind until the board starts to slow down or stall, then back off slightly. That's as tight to the wind as the board will go, which is often near 45 degrees. Traveling into the wind, called **beating**, will require a series of zigzag **tacks**.

To sail off the wind, or **reach**, let the sail out to maximize speed and minimize tilt. A **beam reach** is faster than the wind. The board is perpendicular to the wind with the sail out near 45 degrees.

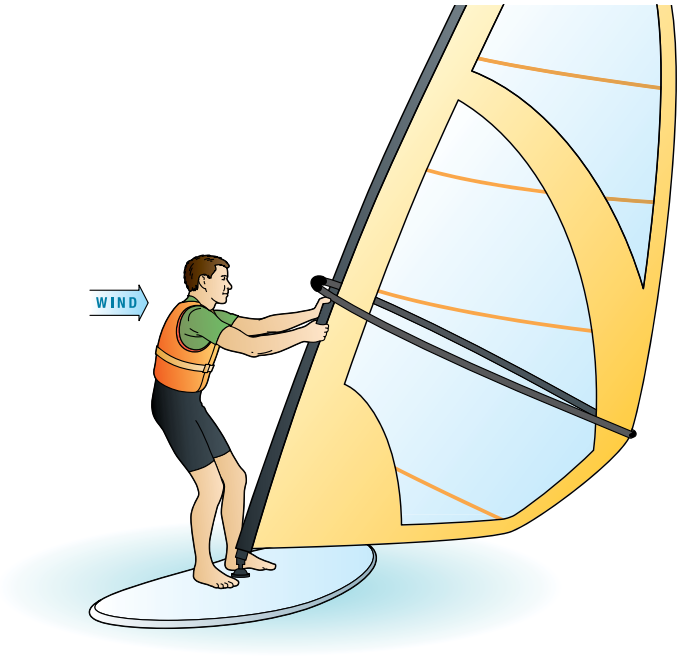
To go directly downwind, or **run**, the sail is at 90 degrees to the board and you should be centered on the board, facing forward, with your back to the wind. Adjust your stance to balance the board, which may feel wobbly or unstable in this direction. The board can go no faster than the wind in this direction.





Stopping

As you near the shore, **sheet out** to slow down, and then let the rig luff as you coast the final distance. Carefully lower the rig into the water, which will stop any remaining forward motion. Crouch down as you lower the sail, and then step off the board.



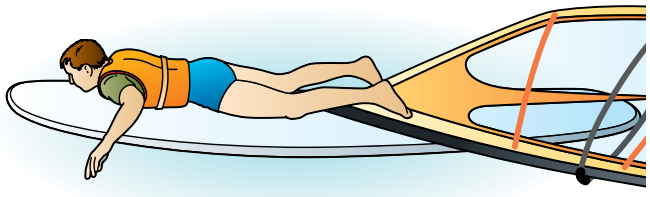
Emergencies

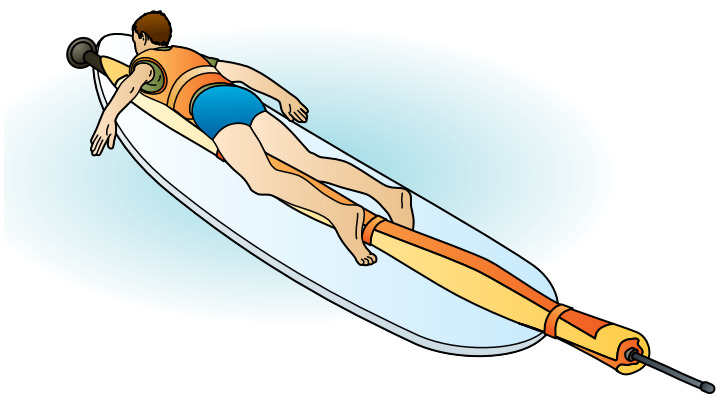
Even when you are careful, situations can arise that will require assistance. For example, a part of the rig could break. Since you should always sail with a buddy close at hand, such assistance should be easy to summon. One way to attract attention is to use a whistle. Always sail with a whistle attached to your life jacket. Another option is to flap your arms vertically in the international distress signal.

Falling off the board is an inevitable part of learning. Try not to fall headfirst, and try not to land on the board or the rig. Avoid foot entrapment between the mast and the board near the mast track. Raise your arms to protect your head from a falling rig. **Always stay with the board.** If the rig separates from the board, grasp the board first.

If you can't sail back to shore—for example, the rig or fin is broken, the wind has stopped completely, or the wind has strengthened beyond your comfort level—the prudent action is to signal for a rescue boat. For short distances, you can paddle to shore by lying prone along the board. Your buddy should follow close by. In light winds, balance the wishbone boom on the aft portion of the board to lift the sail clear of the water. Then lie prone on the forward portion of the board and paddle to shore. In heavier winds, dismantle the rig and roll the sail to make it easier to paddle or to take gear aboard a rescue boat. If you are paddling to shore, point upwind or upcurrent of your projected landing site.

Be alert for other watercraft. With the rig down, the board may be difficult for others to see. (Yet another reason for a buddy board close by.)





Know the Environment

Sailing conditions vary with wind speed, the body of water, and other boat traffic. A small lake or a calm, enclosed bay free of other boats is an ideal area for learning. In such a setting, you should be able to reach shore along some direction even if you can't return to your launch site.

On large lakes or an ocean shoreline, beginners should not launch into an offshore wind. Stay close to shore in case the wind shifts direction or dies. In some areas, the wind will shift from offshore in the morning to onshore in the afternoon and die in the late afternoon. In other areas, afternoon thunderstorms are common during certain seasons. Get off the water in advance of thunder and lightning.

Be alert for shallow water and areas with underwater obstructions. In some parts of the country, trees are left upright in lakes formed by dams and may present underwater hazards.

Tidal currents are strong in some coastal areas, particularly in bays and in the channels between barrier islands. Currents may also be a factor in rivers large enough for boardsailing. Do not sail in situations where currents can carry you offshore or into areas of danger.

Beginners should avoid all but the smallest waves and surf. Wave sailing and other extreme aspects of the sport are only for the experts.

The environment also affects your physical comfort and well-being. Drink plenty of water to avoid dehydration in hot, humid conditions. Protect yourself against sunburn. Be wary of hypothermia. Return to shore if you begin to shiver. Wear shoes or booties to protect your feet.

Safety Guidelines

Whenever youth participate in boardsailing activities as Scouting activities, they must follow the **complete** Safety Afloat guidelines reviewed in Chapter 13. The following list highlights several Safety Afloat items adapted for boardsailing and is consistent with various boardsailing safety codes. Individuals should follow similar procedures.

- **Qualified Supervision.** This item requires the supervisor to either be an experienced boardsailor knowledgeable in accident prevention and prepared for emergency situations, or be assisted by those with such experience.
- **Swimming Ability.** Only persons who have completed the standard Scout *Swimmer* classification test may ride on or control a sailboard. See Chapter 5 for a review of the test.
- **Buddy System.** Each person on the water must have a buddy, either on another board or other type of craft, sailing close enough to monitor one another but far enough apart to avoid collision.
- **Skill proficiency.** Beginners should receive instruction in sailing skills and safety from an experienced boardsailor. Only participants who have demonstrated the ability to control the craft under existing wind and water conditions should be allowed to sail in open water. If needed, a triangular course may be used to test ability before allowing participants to set their own direction. Those who have trouble completing the course should receive additional instruction.
- **Planning and Safety**
  - ◊ Review local weather forecasts prior to the activity and monitor conditions while on the water.
  - ◊ Do not sail where winds or currents are directed offshore into open water.
  - ◊ Stay off the water during high winds, high waves, or lightning.
  - ◊ Check all equipment before going out—yours and your buddy's.
  - ◊ In case of equipment failure or distress, stay with the board.
  - ◊ Determine how to summon help before going out.
  - ◊ Use a float plan to advise others where you plan to sail and when you expect to return.
  - ◊ Plan to be off the water well before dusk. Do not sail at night.
- **Equipment.** All equipment should be safety checked and repaired as needed before each use. Personal gear should include a life jacket, a whistle, footwear, and adequate protection from heat or cold. A rescue craft is recommended for beginner groups. Beginners should avoid high-performance boards

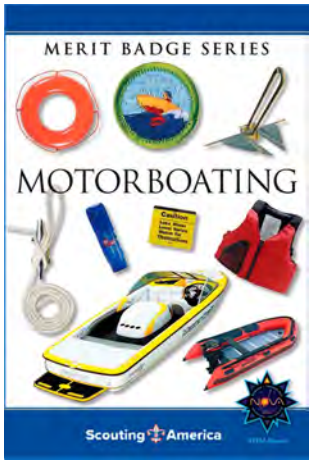
What Next?

The material in this chapter reviews skills and safety items to support the Scouting America Boardsailing award. That training should be provided by a qualified instructor. Although the Boardsailing award provides a basic introduction, there are additional skills used by advanced boardsailors. Again, the best way to learn is from someone with experience, whether just for fun or for competition. Jibing is an alternative way to turn. Foot straps and a harness allow better control of the board. For additional opportunities, check out the website of U.S. Windsurfing mentioned at the start of this chapter.

Chapter 26

Motorboating

A few Sea Scout units do training and extended cruising in large powered vessels, and the National Sea Base uses large dive boats. In those cases, U.S. Coast Guard regulations may require special licenses and certifications for captains, crews, and vessels. For the most part, motorboating by Scouts and the public at large involves a variety of smaller recreational boats including johnboats with small outboard motors, bass boats with large outboards, pontoon boats, multipurpose runabouts with stern drives, and inboards designed for waterskiing. This chapter addresses operation of those craft, including variations in state regulations. Additional information is provided in the Motorboating merit badge pamphlet.



According to Scouting America policies, **a motorboat may be operated by a youth, subject to state regulations, when accompanied in the boat by an experienced leader or camp staff member who meets state requirements for motorboat operation.** Most states set a minimum age for motorboat operation—12 is most common but the range is from 10 to 16 for states with age restrictions. Many of the states with age restrictions also require an adult to be onboard when a minor is operating a motor vessel. More and more states are adding mandatory education and licensing requirements, which often require online or in person classroom sessions but may also include actual skill reviews. In some cases, requirements also depend on the type of craft and horsepower. Some states recognize certificates from other states, some do not.

Because regulations differ from state to state, each leader supervising motorboat operation at a Scouting America function must check and comply with local state requirements. The website of the National Association of State Boating Law Administrators (NASBLA), www.nasbla.org, contains links to the appropriate agency in each state.

Some states offer courtesy rather than compulsory powerboat education courses specific to local regulations. In states without such offerings, there are various options for generic courses that follow NASBLA recommendations. Check the national websites for local chapters of the U.S. Coast Guard Auxiliary, www.cgaux.org, or America's Boating Club, www.usps.org, for additional course opportunities. Such courses are recommended for Scouting America members who own and operate motorboats.

A typical course outline, adapted from NASBLA standards, provides a handy checklist for items that the powerboat operator should understand:

Required Boating Equipment

- [ ] Life jackets
- [ ] Fire extinguishers
- [ ] Backfire flame arrestors
- [ ] Ventilation systems (e.g., blowers for enclosed gasoline engines)
- [ ] Navigation lights for operation at night
- [ ] Sound signaling devices
- [ ] Visual distress signals

Trip Planning and Preparation

- [ ] Checking intended route (access, hazards, permits, alternate emergency destinations)
- [ ] Checking local weather and water conditions (low or high water; wave state)
- [ ] Filing a float plan
- [ ] Preventive maintenance and systems check
- [ ] Trailering
- [ ] Fueling procedures
- [ ] Predeparture checklist and tailgate review for participants

Emergencies

- [ ] Capsize
- [ ] Man overboard
- [ ] Hypothermia and cold-water immersion
- [ ] Fire
- [ ] Grounding
- [ ] Rendering assistance
- [ ] Accident reports

Environmental Laws and Regulations for Safe Boat Operation

- [ ] Operator responsibilities
- [ ] Capacity, trim, and passenger locations
- [ ] Adverse effects of alcohol and other drugs
- [ ] Rules of the road
- [ ] Aids to navigation
- [ ] Docking, mooring, and anchoring (don't anchor from stern)
- [ ] Carbon monoxide hazards (on swim platforms as well as in enclosed spaces)

Other Considerations

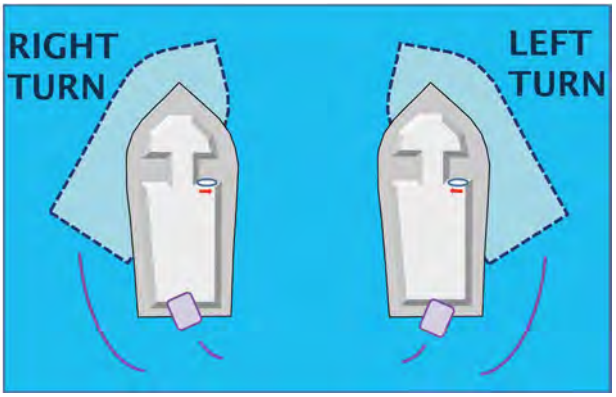
- [ ] Personal watercraft
- [ ] Tow sports (waterskiing, wakeboarding, tubing, etc.)
- [ ] Diving and snorkeling
- [ ] Hunting and fishing

Basic Powerboat Operation

Many powerboat courses focus on cognitive material (that is, rules and procedures in a classroom) rather than physical demonstration and practice. The boat operator should have actual boating experience before transporting others.

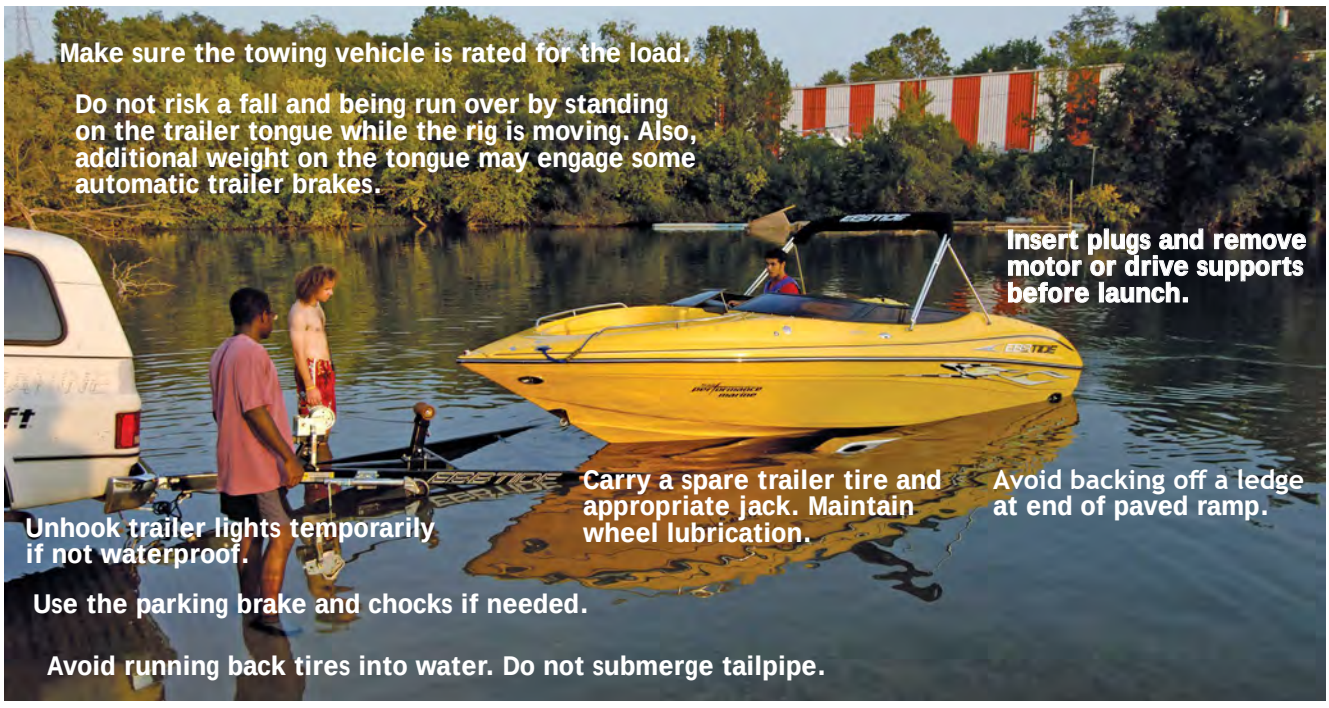
Motorboat operation has similarities to driving a car, particularly if the boat has a steering wheel rather than a tiller. Even though a boat steering wheel is often on the right or starboard side, boats meeting head-on each veer to pass left-to-left, the same as cars on an unmarked country road. When boats are crossing, the boat to starboard has the right-of-way but needs to check that the other boat is acting accordingly. The same principles apply to cars at an unmarked intersection or in an open parking lot. (Review Chapter 15 for a more complete description of the rules of the road.) A car driver can lose control striking an obstacle in the road, swerving to avoid an object, or hitting a bump at high speed. The same is true for a boater encountering a floating log or crossing the wake of another vessel.

A powerboat operator also needs to understand that driving a boat is different from driving a car. For example, a boat has no brakes. It either glides to a stop or is slowed more quickly by shifting to reverse, if available. A boat steers from the back rather than the front. A car will follow the front wheels away from a curb when pulling forward, whereas the front wheels will likely hit the curb if pulling away in reverse. In a similar situation, the back of a boat pulling forward away from a pier will swing into the pier.



Trailering

Many boats are stored out of the water and transported on trailers to and from waterways. The size of the trailer will depend on the size and weight of the boat, including the engine and all gear transported in the boat. Trailers are rated by gross vehicle weight (GVW) and divided into classes. Class I is for trailers carrying less than 2,000 pounds. Larger trailers will have dual axles and may require separate trailer brakes. It is essential that the towing vehicle and hitch are rated for the trailer. Car manufacturers and insurance companies often restrict typical sedans and minivans to minimal towing loads. Larger vehicles can be purchased with special towing packages that include items such as additional cooling capacities, heavy-duty brakes, and larger side mirrors. Four-wheel drive is useful on steep, slippery ramps.



The hitch should be attached to the vehicle frame. Hitches are rated not only on total towing capacity but also on tongue weight. A properly designed and loaded trailer should be balanced with minimal force either pushing down or pulling up on the hitch. Trailer balls come in different sizes and typically can be interchanged on the hitch. Make sure the ball matches the trailer coupling. The trailer should be attached to the hitch with criss-crossed safety chains as well as a ball.

Backing a trailer is an essential skill but can be tricky. Practice on open, level ground before attempting a steep, narrow ramp with a line of other boats waiting to launch.

Getting Under Way

Boats with an inboard engine are required to have a backfire flame arrestor and a ventilation blower. Before starting a gasoline engine in an enclosed compartment, run the blower to clear any fumes that may have accumulated. Failure to do so can result in a serious explosion and fire.

State and federal regulations often require boats to have an engine cut off safety switch (ECOS) and associated ECOS link (ECOSL). The link is typically a lanyard attached to the driver but may be a wireless fob that activates on immersion. Make sure the ECOSL is active prior to starting the engine.

Ideally, the boat should float free of the trailer, but in some cases it may be necessary to power the boat off. Make sure the prop is lowered to an operating position but is clear of the bottom. In most cases, the motor is started in neutral, but some small outboards may not have a gear shifting mechanism.

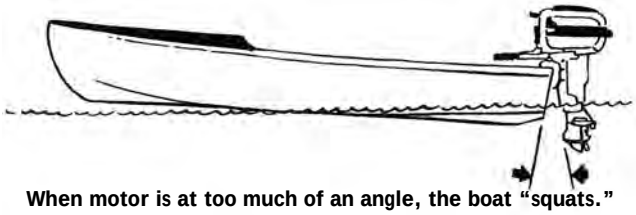
Attach safety lanyard and run blower before starting engine.

Passengers should wait to board until the driver brings the boat alongside the floating piers that generally are provided for that purpose. (Don't forget the person parking the trailer.) Passengers should don life jackets, board one at a time, and sit in positions indicated by the driver. Everyone should have a seat. If there are more passengers than seats, except perhaps for a toddler sitting on a parent's lap, the boat's design capacity has been exceeded and it will be necessary to take turns. Don't overload the boat or allow passengers to ride on the sides. Everyone should remain seated while the boat is under way.

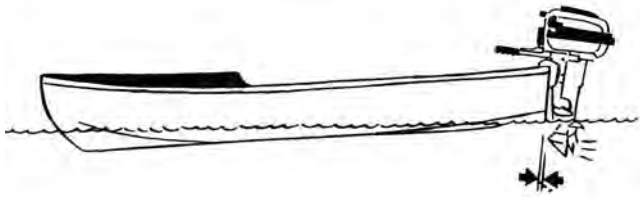
Review basic safety precautions before leaving the dock. Check 360 degrees for a clear departure route. Miniver carefully in congested areas and extend courtesy to other users.

Planing

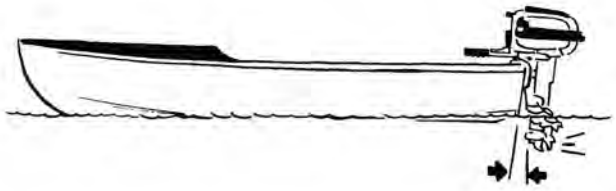
Most small powerboats are designed to **plane**. At low speeds, the boat operates in **displacement** mode: the bow pushes water to the sides while causing significant friction. At higher speeds, the back of the boat glides on top of the water. Motor away from the dock at low speeds—the boat will generate a significant wake while reaching a plane. Once in open water out of no-wake zones, slowly but continuously open the throttle to generate more power. The boat may initially ride high on a bow wave but should quickly level off after reaching planing speed. Slowly back off the throttle to your desired cruising speed. It takes more power to reach a plane than to maintain it. Power-to-speed ratios can be adjusted with power trim tabs in boats so equipped. In most situations, the stern unit should be lowered such that the prop shaft is nearly parallel to the water when at rest. If the unit is lowered too far with the prop shaft angled up, the bow of the boat will plow and may not achieve a plane. If the unit is not lowered enough, the boat squats, and steering while on a plane may be compromised.



When motor is at too much of an angle, the boat "squats."



When motor is not placed at enough angle, the boat "plows."



When motor is angled correctly, the best performance will be obtained.

Turning

Although many powerboats will remain upright during sharp turns at speed on flat water, it is generally better to make gentle turns while planing and limit tight turns to slow speeds. Turn the wheel or tiller slowly, rather than putting it hard over. While turning, the back of the boat will swing wide. Flat-bottomed boats may skid at higher speeds, particularly if towing a skier. Remember to always keep the boat under control. Avoid situations where sudden turns are needed by not outrunning your ability to see ahead.

Waves and Wakes

One potential consequence of a high-speed turn is that a sharp turn into the trough of a wave could cause the boat to flip. Small swells from the side will rock the boat slightly but shouldn't cause a problem at normal operating speeds. If possible, alter course to take large, isolated waves from the wakes of passing boats at an angle, and then resume your previous heading. Large continuous waves should be taken at a slight angle off perpendicular. Decelerate off a plane if control is lost due to pounding. Deep V hulls with an enclosed foredeck and high freeboard will manage waves better than a small open outboard, but the best way to handle large waves in any boat is to get off the water before they develop. Remember to always check the weather forecast before going out and to keep an eye on the sky. Head back to the marina if adverse weather is moving your way. In a pinch, if the waves are large enough to jeopardize control or to bring in water over the sides, temporarily forgo heading to the marina and try to maintain sufficient power to keep the boat headed into the waves at a slight angle.

Stopping

If you suddenly put the engine in neutral while planing, the boat will not immediately stop but will slow down quickly enough to throw your passengers forward. In addition, your wake will continue forward and may spill in over the stern. Plan ahead sufficiently so that you can slowly reduce speed. An easy, controlled stop will take several hundred feet if you are traveling fast. As you reduce throttle, the boat will come off the plane. Continue to reduce throttle to avoid running at intermediate speeds just below planing. At those speeds, the bow lifts, which interferes with visibility, and a large wake is generated. As you approach a dock or trailer, it's a good ideal to kill all forward momentum a boat length or two away by short bumps into reverse at low power. You can then proceed at the boat's slowest forward speed with a final short bump into reverse if needed. Note that the rudder on an inboard allows some steering capability if the boat is gliding forward in neutral. However, outboards and stern drives rely on the prop for steerage. Turning the wheel in neutral will not have much effect.

You should be skilled enough to bring your boat to a stop at the side of a pier or in a slip. In unfavorable winds or currents, you may need to rely on a fender to absorb the final momentum or a boat hook to close the final gap. Throwing a line to someone already onshore may also be handy. However, you should not expect or allow passengers to jump off a moving boat or to grab a post to stop the boat from crashing into the pier.

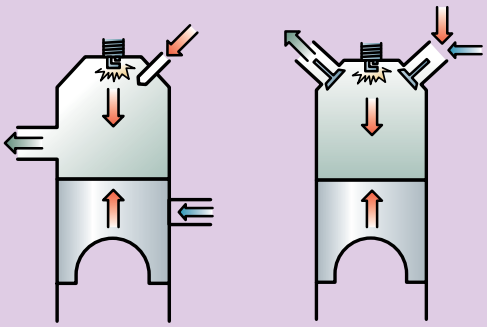



Personal Watercraft

The initially poor safety record and nuisance complaints associated with personal watercraft have been moderated with education, supervision, regulation, and design changes. Scouting America councils may apply to the National Council for approval to conduct a personal watercraft (PWC) camp program. Consult National Camp Accreditation Program (NCAP) standards for details. However, unit use of personal watercraft by youth is not an authorized Scouting America activity. Individuals who operate private personal watercraft should note that the Personal Watercraft Industry Association recommends operator training and a minimum operator age of 16 even though regulations in several states are less restrictive. Safety guidelines are available at www.pwia.org and www.uscgboating.org.

Two- and Four-Cycle Outboards

The technology and regulation of outboard motors continues to evolve. Years ago, two-cycle designs were preferred for small engines with a single piston. They burned a gas/oil mixture and were lighter, more powerful, lower maintenance, and less expensive than four-cycle models. However, they were noisy and released more pollutants. Most were unable to meet newer environmental regulations and the market shifted to four-cycle designs. Since then, carburetors have been replaced with direct fuel injection and two-cycle engines are again produced. However, four-cycle engines are more fuel efficient and durable.

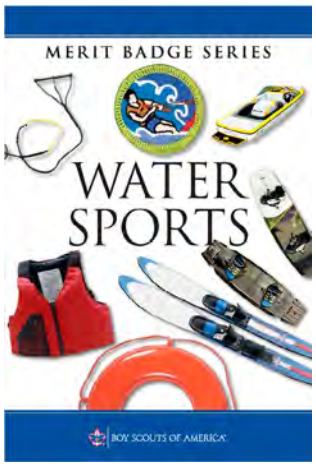


Chapter 27

Tow Sports

Tow sports in aquatics include any activity in which a person is pulled in or above the water by a line attached to a power source. The typical power source is a motorboat but could be a sailboat, a kite, or a cable. Tow sports include riding on flotation devices, waterskiing, kneeboarding, wakeboarding, hydrofoiling, parasailing, and kitesurfing. This chapter does not provide details on the skills needed to perform the activities. Instead, it focuses on safety policies and procedures that unit leaders should consider as part of a SAFE Checklist review and assessment during activity planning and execution. The chapter also discusses several tow sport activities, such as parasailing, that are not authorized as Scouting America youth programs.

Basic information on waterskiing and wakeboarding skills is provided in the Water Sports merit badge pamphlet. Additional information may be found on the USA Water-ski and Wake Sports website.



The Guide to Safe Scouting states the following for Tow Sports:

All participants in towed activity afloat (waterskiing, wakeboarding, kneeboarding, tubing, etc.) must have successfully completed the Scouting America *Swimmer* classification test and must wear a life jacket that has U.S. Coast Guard approval for the activity. Supervision must include both a skilled boat driver who meets state requirements and is currently trained in Safety Afloat and a separate designated observer. Participants should observe the Water-Skiers Safety Code and the Boat Drivers Safety Code found in *Aquatics Supervision*. Use only floats specifically designed for towing that provide secure handholds for each rider.

Both the boat operator and the designated observer must visually inspect the water around the boat and confirm by a headcount during a buddy check that everyone in the party is either securely on board or well clear of the propulsion system before the engine is started. This mandate applies to both towed activities and swimming activities in conjunction with the towed activities.

The designated observer must be no less than 18 years of age and present on the watercraft.

The list of prohibited activities in the Guide to Safe Scouting includes aerobatics while skiing or wakeboarding and any activity in which a person is carried aloft by a parachute, parasail, kite, flying tube, or other device.

States likewise have various regulations governing tow sports, such as boat operator licensees, spotter requirements, and restrictions on operating from dusk til dawn.

The skills needed by individuals participating in towed activities vary from simple to difficult. In many cases, the activity itself will have components ranging from basic to extreme. The activity leader should not allow participants to attempt maneuvers without appropriate training, or maneuvers of questionable safety.

Tow sports and devices are continually evolving. Some products are introduced and then recalled due to poor safety records. In the absence of a specific Scouting America policy, the unit leader is responsible for making reasonable judgments about an activity's safety, age appropriateness, and training requirements based on the leader's own experience. Questionable activities should be curtailed or postponed until appropriate trained supervision becomes available.

Skier safe

Skier in water

Water-Skier's Safety Code

The following items support safe, enjoyable waterskiing and also apply to wakeboarding and kneeboarding:

- Always learn to water-ski by taking instructions from a good water-ski instructor or an advanced skier.
- Always wear a personal flotation device when skiing. Before entering the water, make sure your life jacket is adjusted correctly for safety, comfort, and freedom of movement. Always make sure your life jacket is in good serviceable condition.
- Always look ahead and know where you are going at all times.
- Always stay away from solid objects such as docks, boats, and stumps.
- Always be courteous and stay a reasonable distance from other skiers, boats, and swimmers.
- Always run parallel to shore and come in slowly when landing.
- Always learn new maneuvers progressively.
- Always have an extra person in the boat to watch the skier.
- Always signal that you are all right after a fall by clasping your hands overhead to notify the driver and observer.
- Always hold up a ski while waiting in the water in a well-traveled boating area.
- Always check your equipment for dangerous, sharp, or protruding objects (wing nuts, loose runner, slivers).
- Never ski in shallow water or in an area where you do not know the depth. Minimum safe depth is 6 feet.
- Never put any part of your body through the bridle or wrap the rope around any part of your body.
- Never yell "Hit it!" or "Go boat!" until the rope is tight and the tips of your skis are up.
- Never ski to the point of exhaustion.
- Never ski at night. (Almost all states prohibit skiing from dusk to dawn.)
- Never ski directly ahead of another boat.
- Never ski double with different lengths of rope.
- Never attempt fast landings directly toward shore.
- Never jump from the boat while it is moving.
- Never move toward the boat until directed to do so by the observer.
- Never approach or climb into the boat while the motor is running, even if it is in idle.
- Always use a stern platform or ladder when climbing into the boat.

Role of the Observer

The designated observer watches how the skier, boarder, or float rider is doing; relays signals both ways between the participant and driver; tells the boat driver if the participant falls; watches for potential hazards; and helps the driver stay aware of traffic approaching from the rear.

The observer and skier should review signals before the skier enters the water. Although signals are fairly standard, they vary slightly in some regions. For example, some people indicate a turn by circling a hand overhead and then pointing in the desired direction, others simply point, and some employ the straight- and bent-arm signals used for bicycles. Agree on signals under way for OK, stop, faster, slower, right turn, left turn, and return, and make sure the skier knows to quickly use the skier safe signal after a fall.

Faster

Slower

Cut motor or stop

Home

The observer is in charge of the towrope. The observer coils the line into the boat when the skier is ready to board, pays it out when necessary for deepwater starts, and makes sure the line is clear prior to starts.

A critical function of the observer is to determine the location of everyone in the group, as well as anyone else nearby in the water, before giving the driver clearance to start the engine. The buddy system required by Safety Afloat is an aid in that process, and confirmation by buddies should be a first step. However, the observer should still make an individual count and scan the water around the boat prior to giving an all-clear to the driver.

Boat Driver's Safety Code

Boat drivers should never forget that they are not driving for personal pleasure. The boat is operated solely for the benefit and safety of those being towed. All boat drivers should observe the following:

- Always have an observer onboard to watch the participant(s).
- Always return quickly to protect a fallen person, who is helpless in the water against oncoming boat traffic. Anyone being towed is your primary responsibility.
- Always drive according to the participant's ability, and avoid sharp turns.
- Always use common sense and courtesy when driving.
- Never ride the gunwale or the back of the seat while driving and do not allow passengers to ride that way.
- Never tow anyone in congested areas, particularly swimming areas.
- Always put the motor in neutral when passing a person in the water.
- Always turn the motor off when picking up a person.
- Always take a swimmer into the boat using a ladder or low rear deck, avoiding any contact with the motor, rudder, or drive.
- Always independently confirm the location of everyone in the group and visually scan all around the boat and verbally check that the observer has done the same prior to starting the motor.

Safe Boat Maneuvers

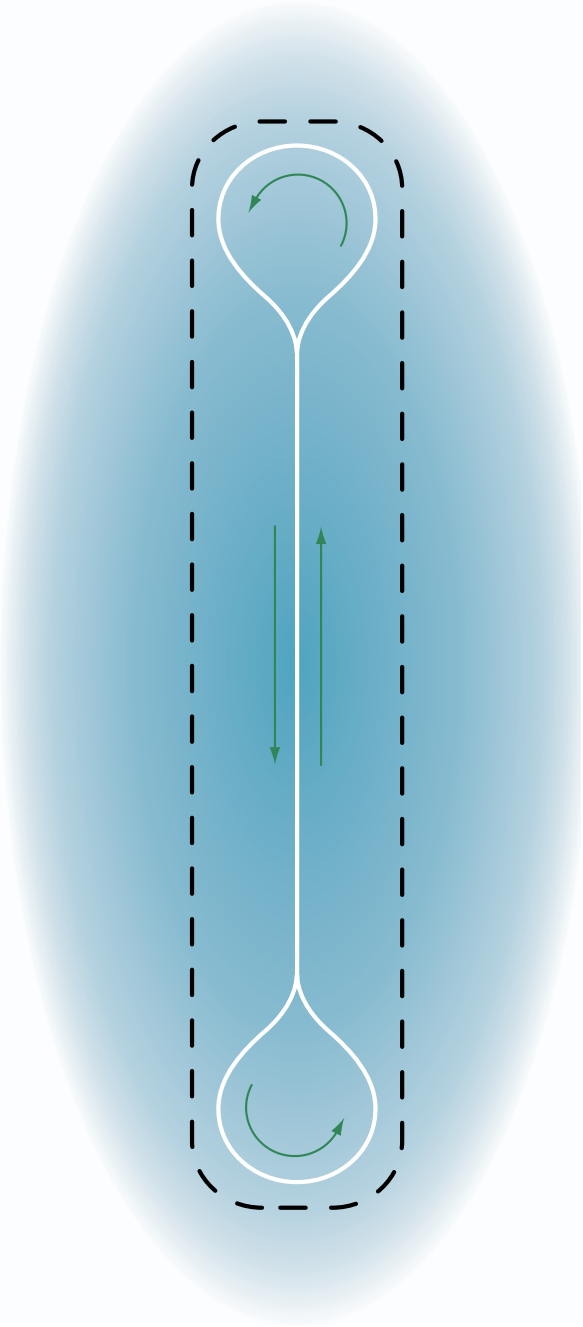
Keep passengers in the towboat to a minimum. Passengers other than the observer and the skier's buddy may distract the driver. In a low-powered boat in particular, unnecessary passengers make good starts more difficult.

The driver looks ahead while the observer watches the skier. The ski buddy sits low and out of the way.

Although a skier or boarder may request a takeoff by shouting "Hit it!" the boat driver should not respond without clear water ahead for a considerable distance. The acceleration should not be so abrupt as to jerk the line from the skier, but the boat will need to proceed quickly to a plane, from which the driver should throttle back to a speed that matches the skier's ability and desire. The driver should also avoid a turn during the takeoff by checking that the towrope, the centerline of the boat, and the prop axis are all approximately aligned. That check is normally done when taking the slack out of the line.

The towboat should proceed in a straight line at uniform speed except when turning to reverse direction or pick up a fallen participant. Fishtailing or rapid speed changes intended to upset a skier or to dislodge a rider are irresponsible and inappropriate.

Ideally, the towpath should be clear of obstructions or other vessels for roughly 100 feet to each side and at least a quarter-mile long. Other boats should stay clear of a boat and riders being towed. However, the tow driver should be prepared to take appropriate evasive action (either a wide swerve or a controlled stop) if other boats continue on a crossing path.



Turns at the ends of a run should be a wide oval to avoid pulling the participant through the boat wake. After the turn, the towboat should proceed back along its previous wake. At times, skiers may intentionally cross the wake either during a straight run or during a turn. However, the actions of the boat driver should not force the participant to cross the wake. Water is typically smoother inside the wake if there is chop on the open lake due to wind and other boat traffic, and crossing the wake can be intimidating for a beginner.

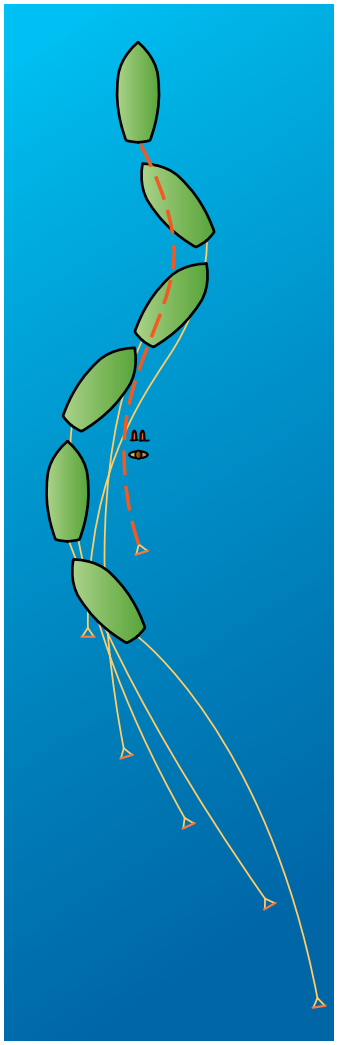
When a skier falls, the driver, through the observer, should make certain the skier is all right and return as quickly as safety permits if the skier fails to give the "safe" signal.

If the skier is all right, the driver should turn and idle back toward the skier, approaching to pass on the driver's side for best visibility. As the boat approaches the skier, the observer asks if the skier wishes to go again.

If not, the driver kills the engine and coasts abreast the person, staying far enough away that the boat does not glide or blow into the person. If boarding is from the stern, caution the skier to avoid sharp edges on any exposed drive mechanism. Turning an outdrive away from the boarding ladder may help.

To continue the run, the driver pulls abreast of the skier, but still at least 10 to 12 feet away, and then starts a sharp turn around the skier at idle speed. If the driver continues to turn in a half circle completely around the skier, the boat will be positioned to continue in the same direction it was going when the skier fell.

Alternatively, if the driver starts a tight turn around the skier followed by a sharp turn in the opposite direction, the S-shape course will bring the towline close to the skier. The new course will be reversed relative to the previous run.



"Skier Down" Flags

Some states require the towboat to display a 12-by-12-inch orange flag when the boat is moving to pick up a fallen skier, boarder, or float rider. Because regulations differ from state to state, each leader supervising a towing activity during a Scouting function must check and comply with local requirements. The website of the National Association of State Boating Law Administrators, www.nasbla.org, contains links to the appropriate regulatory agency in each state.

Towed Flotation Devices (Tubing)

The roles and responsibilities of the boat driver and observer while towing riders on a float are similar to those while towing people on water skis or wakeboards.

Persons on flotation devices should be towed at slow speed well away from any obstacles. A prudent speed depends somewhat on the design of the float, that is, how secure the passengers are, and the age and comfort level of the participants. The driver should immediately honor any requests to slow down, even if given contradictory instructions by other riders. The driver should also ignore requests for greater speeds at which the float becomes unstable. Only use floats specifically designed for towing. Each rider should have a secure grasp on the device, not on another rider. Don't rig makeshift floats using car or truck tire inner tubes.

The number of riders on a float plus the number of people in the towboat, which must include at least the driver and an observer, must not exceed the towboat's rated occupant capacity. Given that requirement, the easy way to start the tow and retrieve riders is in deep water away from congested beaches or launch areas. That avoids potential problems with trying to tow the device into shallow water or to a pier for riders to board and disembark.

If more than one person is on the float, and one falls off, the others should remain with the float while the boat turns to retrieve the fallen passenger. The procedure is similar to picking up a fallen skier. Make sure riders know to use the hands-overhead "safe" signal.

Unauthorized Activities

Parasailing is a popular concession at many resort areas. A patron is lifted high above the water wearing a parachute while being towed by a boat. In some cases, the participant is winched down to a platform on the back of the moving craft and never enters the water. Parasailing and other aerial activities such as static parachute jumps, skydiving, paragliding, and hang gliding are not authorized youth activities for Scouting America groups.

Kitesurfing is somewhat similar to wakeboarding except the towline is pulled by a kite held by the rider rather than a motorboat. Even though modern rig designs have led to increased control, control is still uncertain and there is a reasonable expectation that the participant will become airborne, either accidentally or intentionally. It is not unusual for a participant to be pulled off the board. Therefore, some users attach themselves to the board with a lanyard. However, head injuries, even when a helmet is worn, sometimes result from the lanyard pulling the board into the participant. In some areas, there have been problems with overhead obstructions, such as power lines. This sport is not an authorized Scouting America activity.

Some towed floats are designed to "fly". Some models have been recalled due to safety concerns, but others may be available. They are not appropriate for Scout use.

Basic waterskiing and wakeboarding activities are approved. However, extreme aspects of the sports involving aerobatics are not.

Boat operators are expected to apply SAFE principles to their actions. Some drivers and swimmers consider it fun for a speed boat to cut tight circles around a person in the water. That is not a valid Scout program.

Review Questions for Section III

1.0 List the nine points of Safety Afloat.

1.

2.

3.

4.

5.

6.

7.

8.

9.

2.1 All adult supervisory personnel for a boating activity must be over 21.

T F

2.2 According to both Safety Afloat and Youth Protection guidelines, there must be at least two adults for any activity afloat, with one over 21.

T F

2.3 The ratio of supervisors to participants is 1-to-10 for Scouts BSA and Cub Scouts.

T F

3.1 Life jackets must be worn by everyone during all small-boat activities.

T F

3.2 Adults on Scout float trips may safely store life jackets close at hand on calm water.

T F

3.3 Exceptions to life jacket use are allowed for vessels over 20 feet in length.

T F

4.1 No youth may control any boat without first completing three hours of skill instruction.

T F

4.2 Participants on an extended float trip must demonstrate basic proficiency or complete three hours of skill instruction.

T F

4.3 Buddy tags must be used to account for everyone participating in a boating activity.

T F

5.1 All participants on whitewater treks with rapids rated higher than Class II must have specialized training.

T F

5.2 Youth may only operate a sailboat with an adult or camp staff member onboard.

T F

5.3 Youth may only operate a motorboat with an adult or camp staff member onboard.

T F

6.1 Which type of life jacket is recommended for most recreational boating activities?

A. Level 100
B. Level 70 - horse collar design
C. Level 70 - vest with 3 fasteners
D. Level 50

6.2 Certified inflatable life jackets are Coast Guard-approved:

A. When worn
B. With age restrictions
C. In non-impact situations
D. All of the above

6.3 For proper life jacket fit:

A. Check the size label
B. Lift the straps at the shoulders
C. Fasten all buckles, straps, or zippers
D. All of the above

7.1 Which statement is incorrect?

A. Hypothermia is a dangerous drop in body core temperature.

B. Hypothermia impairs mental and physical capabilities.

C. Hypothermia is only a concern in northern climates or in rivers fed by snow melt.

D. An unprotected boater falling into water near freezing is impaired almost immediately and may die within minutes.

7.2 Progressive symptoms of hypothermia are

A. Unconsciousness, shivering, death

B. Shivering, impaired judgment, loss of dexterity

C. Slurred speech, clumsiness, shivering

D. Muscle rigidity, inward behavior, loss of dexterity

7.3 The best prevention for immersion hypothermia is

A. Wear a wet suit

B. Assume the H.E.L.P. position

C. Get out of cold water immediately

D. Avoid immersion in cold water

8.1 For a person facing forward in a boat headed downstream, the direction to the right is

A. River left

B. Starboard

C. Port

D. Onside

8.2 Which terms in order denote the front and back of a boat?

A. Transom, bow

B. Bow, stern

C. Port, gunwale

D. Starboard, aft

8.3 If the _____ reduces significantly when a boat is loaded, the load may be too heavy.

A. Gunwale

B. Freeboard

C. Draft

D. Sheer

9.1 A canoe is more stable when a passenger is sitting on the bottom rather than standing.

T F

9.2 A boat that is stiff is always harder to tip over than a boat that is tender.

T F

9.3 A load may safely exceed a boat's rated capacity if the boat is operated only at slow speeds.

T F

10.1 The most general navigation rule for boats on a collision course is

A. Red, right, returning

B. Commercial boats yield to private boats

C. More maneuverable yields to less maneuverable

D. Boat on the right is always right

10.2 Which of the following is not true?

A. Powerboats meeting head-on each veer to the right.

B. When powerboats are crossing, the boat to starboard has the right-of-way.

C. A sailboat has the right-of-way when overtaking a powerboat.

D. Private craft must stay clear of military vessels.

10.3 Boaters should stay clear of areas marked with

A. A white buoy with a crossed diamond

B. A white buoy with a diamond

C. A red flag with a diagonal white stripe

D. All of the above

11.1 All states require all boats to be registered.

T F

11.2 Any boating accident during a Scout activity involving significant injury must be reported to both law enforcement and the local council.

T F

11.3 Access to public waterways is unrestricted.

T F

12.1 Canoeists should maintain three points of contact when moving in the boat.

T F

12.2 Paddling while kneeling is inefficient, uncomfortable, and generally poor form.

T F

12.3 Canoeists should both paddle on the same side and switch sides in unison to maintain a straight course.

T F

13.1. A draw and a pry in unison from opposite sides move the canoe sideways.

T F

13.2 A draw and a pry in unison from opposite sides pivot the canoe.

T F

13.3 Forward sweeps in unison from opposite sides pivot the canoe away from the onside.

T F

14.1 After a canoe capsizes, boaters generally should abandon the boat and swim quickly to shore to prevent hypothermia.

T F

14.2 The first concern after capsizing is the safety of the boaters.

T F

14.3 To rescue a swimmer, approach in a canoe so that the swimmer makes contact amidships at the widest, most stable point.

T F

15.1 Use a "J" at the end of each kayak stroke to maintain a straight course.

T F

15.2 Feathering while kayaking requires a no-slip grip with both hands.

T F

15.3 While kayaking, power is applied through the paddle by rotating the torso.

T F

16.1 Kayaks automatically flip up after capsizing if the paddler maintains position.

T F

16.2 A capsize drill is a useful safety precaution prior to instruction in a decked kayak.

T F

16.3 A wet exit is more difficult with a narrow cockpit and a spray skirt.

T F

17.1 Which of the following is not a safety concern on a river?

A. A strong current
B. A rip current
C. A strainer
D. A low-head dam

17.2 When rounding a river bend, the current strength and water depth will be greatest

A. On the inside of the bend
B. In the middle of the channel
C. On the outside of the bend
D. Unpredictable

17.3 Strainers are most likely to lie

A. Near the cut bank on the outside of a bend
B. In the shoals on the inside of a bend
C. In the middle of the channel
D. Just below the surface moving with the current

18.1 Any river flow above 1,000 cfs is dangerous.

T F

18.2 A low-head dam can be safely run if paddlers lean back in their craft to keep the bow up as it crosses the lip.

T F

18.3 The best way to control a craft in a current is to match the speed of the current.

T F

19.1 If boaters lose contact with a boat during a capsize in warm water, they should

A. Try to stand up in the current
B. Float feetfirst downstream while moving toward shore
C. Swim headfirst downstream while moving toward shore
D. Swim directly for the nearest strainer

19.2 If a boater capsizes in a narrow, very cold river, the swimmer should

A. Try to stand up in the current
B. Hold to the back of the boat
C. Float feetfirst downstream
D. Get out of the water as soon as safely possible

19.3 If a capsized boater is unavoidably swept into a strainer, the swimmer should

A. Dive underwater to pass beneath
B. Fend off the object while floating feetfirst
C. Assume a headfirst position and try to climb up onto the object
D. Swim upstream to ferry around the object

20.1 Riding tubes or floats down a lazy river is allowed for all ages and ability groups.

T F

20.2 Only swimmers may ride floats on a river.

T F

20.3 Life jackets are not needed because tubing on a river is a swimming event rather than a boating event.

T F

21.0 Participants in whitewater treks in rapids rated at Class III must

A. Have special training in whitewater if controlling the boat
B. Ride as a passenger in a boat controlled by a trained guide if not trained
C. Always wear a helmet
D. All three apply

22.1 A whitewater canoe or kayak generally differs from a touring model by being

A. Shorter, with a flatter bottom
B. Shorter, with more rocker
C. Longer, with a flatter bottom
D. Longer, with more rocker

22.2 Which of the following whitewater features should be avoided?

A. An open V (pointed downstream)
B. A closed V (pointed upstream)
C. Standing waves
D. Eddies

22.3 Which of the following whitewater features is generally the least hazardous?

A. A hole
B. A drop
C. Shoals
D. An undercut

23.1 Major or unfamiliar rapids should be scouted from shore.

T F

23.2 In general, plan a route by scouting from the top of the rapid to the end.

T F

23.3 Features seen from a high bank may be difficult to spot at river level.

T F

24.1 When scouting a rapid, the party must choose between everyone running the rapid and everyone portaging the rapid.

T F

24.2 If the trek leader is not confident that the skill of the participants allows an adequate margin of error, then those participants should portage the rapid.

T F

24.3 If the trek leader determines that the likely consequences of a mishap are acceptable, then each individual still decides whether or not to run that rapid.

T F

25.1 Cub Scout dens may not conduct overnight float trips.

T F

25.2 Swimming ability is not an important consideration during float-trip preparation since all participants will wear life jackets.

T F

25.3 A unit with only Class II skills may not consider a float trip on a river with even a single Class III rapid.

T F

26.1 River guidebooks are often unreliable and should not be consulted when planning a float trip.

T F

26.2 River guidebooks should be reviewed, but firsthand experience is better.

T F

26.3 Boat livery companies are often good sources for equipment, shuttles, and general information.

T F

27.1 Because of shuttle concerns, large groups are better transported in multiple private cars rather than a single bus.

T F

27.2 Large numbers of boats are best transported on a trailer rather than car-topped.

T F

27.3 An easy way to handle a shuttle is to have drivers who do not travel downriver.

T F

28.1 Which of the following is likely the least useful on a float trip?

A. Stout, no-slip footwear that can get wet
B. Hooded rain jacket rather than a poncho
C. Cell phone
D Computer tablet

28.2 What is the preferred way to distribute gear?

A. Each person packs to be totally self-sufficient
B. Group gear and provisions (tents, stoves, food) are packed with all like items together with each category carried in a different boat
C. Critical gear and provisions are divided into two or three packs and carried in different boats
D. Each item is packaged and loaded separately in waterproof containers that float

28.3 Which is an important consideration when loading a boat?

A. Easy access to important gear (water, cameras, first aid supplies)
B. Manageable portage loads
C. Boat trim
D. All of the above

29.1 When traveling on the water, experienced crews lead and inexperienced crews follow at the end.

T F

29.2 Only the lead boat needs to carry a route map.

T F

29.3 Avoid traveling across open water with the wind at your back.

T F

30. **Which best describes a float plan?**
    A. A simple alert mechanism if a party is overdue
    B. A complete itinerary shared with the immediate party and those at home
    C. Emergency contact procedures to and from the crew in case of trouble
    D. All of the above

31. **A common problem with rowing technique is the use of oars that are too long for the boat.**
    T F

32. **During the rowing stroke, the hands should trace out vertical circles.**
    T F

33. **Oarlocks, other than on outriggers, should be lowered when not in use.**
    T F

34. **Some Scout high-adventure bases offer captained sailboat cruises.**
    T F

35. **Small-boat sailing experience qualifies a leader to skipper a cruising sailboat.**
    T F

36. **Modern navigation aids eliminate past concerns with sailing at night and out of sight of land.**
    T F

37. **All sailboards are well-suited to both learners and experts.**
    T F

38. **Offshore winds allow beam reaches parallel to the shore and are favorable for boardsailing.**
    T F

39. **Scouts earning the Motorboating merit badge at camp are generally exempt from state licensing requirements.**
    T F

40. **Motorboats on converging paths yield right-of-way similar to cars.**
    T F

41. **Motorboats steer the same as cars.**
    T F

42. **A rearview mirror is an adequate substitute for an observer when a motorboat is towing a person.**
    T F

43. **The towpath should be clear of obstructions and other boats for 100 feet to each side.**
    T F

44. **Some states require "skier down" flags.**
    T F

45. **Which of the following is an authorized Scouting activity at the unit level?**
    A. Personal watercraft operation
    B. Towed flotation devices
    C. Parasailing
    D. Kitesurfing

Program Delivery

Section IV

Appendix 1

Council Aquatics Committees

Local Scouting America aquatics programming is enhanced when a council aquatics committee promotes activities, helps procure equipment and instructors, and provides guidance to unit leaders and council professionals. Interested volunteers should check with their local council service center. Some committees have been active for years but need an influx of new members to remain viable. In other councils, the aquatics committee may not exist or may be inactive. In that case, an interested volunteer is needed to work with council professionals to generate sufficient interest to form an active committee. The following material is a guide to aquatics committee organization, responsibilities and activities.

Organization

The aquatics committee has overall responsibility for the local council's aquatics activities in Cub Scouting, Scouts BSA, Venturing, and Sea Scouts. Within the local council organization, the aquatics committee reports to the vice president of program or to the vice president of health and safety. The aquatics committee may be a separate committee or a subcommittee within the camping or health and safety committees.

Members of the aquatics committee should be experienced Scouters with a background in aquatics, or aquatics specialists interested in becoming involved in Scouting. The committee should include at least one individual with a current National Camping School Aquatics Instructor training card.

Besides swimming and water-rescue specialists, the committee should include specialists for the type of aquatics activities prevalent in the local council (e.g., snorkeling/scuba, canoe tripping, sailing, whitewater, crew rowing, waterskiing, Sea Scouting, etc.). Select committee members should be members of or liaisons to other council committees that touch the aquatics committee's areas of responsibility including training, advancement, health and safety, camping, etc.

Camp aquatics directors hired by the council for the summer should be ex officio members of the committee during their term of employment and afterward encouraged to become full-time, year-round volunteer members.

Responsibilities

The aquatics committee's main responsibilities include the following year-round activities tailored to the local council's aquatics activities and opportunities:

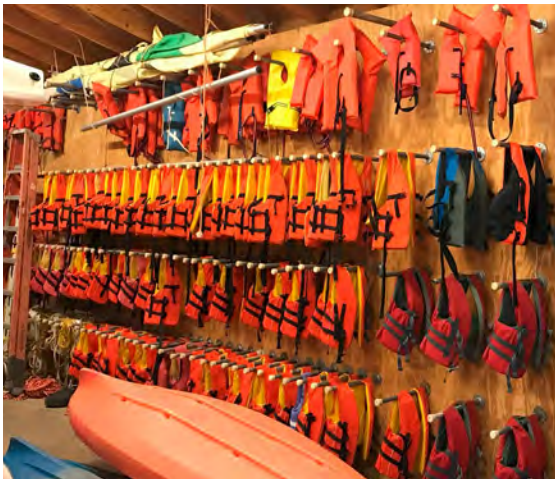
- **Training.** Work with the council training committee to provide aquatics training for adults and youth.
- **Program.** Provide and promote a broad array of basic and high-adventure swimming and boating activities to support all parts of the Scouting program.
- **Advancement.** Provide advancement opportunities for youth.
- **Safety.** Actively assess safe operation of council- and district-led aquatics activities including summer camp and promote aquatics safety at the unit level.
- **Attraction, Development, and Retention of Aquatics Leadership.** A primary role of the committee is attracting, developing, and retaining qualified aquatics leaders for the training, program, advancement, and safety activities above. This includes summer camp and year-round council and district led aquatics activities and should include succession planning for key roles.

Key Activities

Local council aquatics committee activities should include but are not limited to the following items, grouped by the responsibilities listed above.

Training

- Safe Swim Defense and Safety Afloat
- Swimming and Water Rescue skills training for unit leaders
- Paddle Craft Safety skills training for unit leaders
- Development of unit aquatics activities for unit leaders
- Camp aquatics staff training in:
  - —Aquatics skills
  - —Effective teaching of aquatics skills
  - —Aquatics safety, including lifeguard assessments
- Basic canoeing
- Basic rowing, fixed seat or crew rowing with sliding seats
- Basic whitewater
- Nonswimmer instruction



Program

- Promote learn-to-swim programs for all members, especially Cub Scouts, by providing opportunities and incentives.
- Provide or promote whitewater canoe, kayak, rafting trips.
- Provide instruction for special awards: Snorkeling, Kayaking, Boardsailing, Mile Swim.
- Promote aquatics high-adventure opportunities—Northern Tier, Sea Base, Summit, other.
- Provide or promote scuba activities.
- Provide enhanced aquatics activities during day camp and resident camp sessions for Cub Scouts and for Scouts BSA.
- Help select, procure, and maintain camp aquatics equipment.
- Provide special aquatics camp sessions for Scouts BSA and Venturers with emphasis on activities not available during regular summer-camp sessions.
- Provide winter swim programs with learn-to-swim and advancement opportunities for Cub Scouts, Scouts BSA, Sea Scouts and Venturers.
- Coordinate with other councils to promote programs and resources.
- Implement and promote the aquatics portions of the national American Red Cross and Scouting America agreements and interface with the assigned Red Cross aquatics liaison.
- Coordinate with other agencies (e.g., YMCA, NAUI, PADI, American Canoe Association, etc.) for joint programs or use of facilities.

Advancement

- Cub Scout elective Adventures
- Second Class and First Class rank requirements
- Swimming and Lifesaving merit badge clinics outside of summer camp
- Canoeing and other merit badges outside of summer camp

• Safety

- Promotion of Safe Swim Defense and Safety Afloat at the district and unit level
- Precamp swim classification testing
- Review of council and district safety training and procedures for aquatics activities including day and resident camps
- Inspection of summer camp and other council and district aquatics activities facilities and equipment

Attraction, Development, and Retention of Aquatics Leadership

- Assist with sourcing qualified candidates.
- Assist with interviewing candidates to ensure necessary aquatics experience, training certificates, and aquatics leadership.
- Establish a succession planning process identifying the next aquatics leaders for key roles.
- Establish a program to train, develop, and retain younger aquatics staff members to become aquatics leaders in the future. This includes staff for summer camp and year-round council- and district-led aquatics activities. The staff training process for summer camp staff ideally would begin in the January-to-April period each year to ensure that a well-trained aquatics staff exists before arriving at summer camp.
- Develop and maintain enough qualified instructors, distributed throughout the council, to timely meet all local aquatics training needs.

Resoure Kit

A 39 page Local Council Aquatics Committee Resource Kit is available online. Several examples of year-round council aquatics activities are included. The kit was last updated in 2022 so does not reflect the retirement of the BSA Lifeguard program at the end of 2024 or the organization name change from Boy Scouts of America to Scouting America but those are minor items compared with the information within.

Appendix 2

Merit Badge Counselors

The following material reviews the Scouting America merit badge program for aquatics specialists from other organizations interested in volunteering as counselors. Subject-specific information is found in the merit badge pamphlets. Counselors should review that information before conducting merit badge sessions. For additional information see the Merit Badge Counselor page on the Scouting America website.

The Aims of Scouting

The Scouting program is an educational program aimed at teaching youth character development, citizenship, and mental and physical fitness. These aims of Scouting are accomplished through the use of eight fundamental methods:

- The ideals of Scouting (Scout Oath, Scout Law, Scout motto, Scout slogan)
- The patrol method
- The outdoors
- Advancement
- Association with adults
- Personal growth
- Leadership development
- The uniform

What Is Advancement?

Advancement is the process by which a Scout progresses from rank to rank in the Scouting program. It is simply a means to an end and not an end in itself. Everything done to advance and earn higher ranks is designed to help the Scout have an exciting and meaningful experience.

The advancement method is designed to encourage a young man to accomplish a progressive series of fun and educational tasks. Earning merit badges allows Scouts to explore many fields, helps them round out their skills, and perhaps introduces them to subjects that will become lifelong interests or rewarding careers.

What Is a Merit Badge?

A special part of a Scout's learning adventure, merit badges are awards presented to when a Scout has completed the requirements for one of the merit badge subjects. There are more than 135 merit badges a Scout may earn. The subject matters range from vocational and careers introduction to personal development, hobbies, sports, high adventure, citizenship, and life-skills development.

Every merit badge is designed to teach the Scouts new skills while actively encouraging them to challenge themselves and have fun in the process. Merit badges offer a range of difficulty over a breadth of subject matters, and each Scout is free to pursue any merit badge they wish. The merit badge itself is a simple embroidered patch, but the intangible end result of earning it is that the Scout gains self-confidence from overcoming obstacles to achieve a goal.

Why Does Scouting America Use Merit Badge Counselors?

One of the methods of Scouting is association with quality adults. Besides a Scout's parents and relatives, schoolteachers, religious leaders, and possibly sports coaches, most Scout-age youth do not have much contact with many other adults or professionals. Merit badge counselors provide an excellent means for each Scout to grow through exposure to outstanding adults who serve as examples and mentors to them. The opportunity to deal with business leaders, trained specialists, and experienced hobbyists while pursuing a merit badge offers the Scout a chance for personal growth and possibly a life-altering experience.

Scouting America recognizes that the merit badge counselor is the cornerstone to the merit badge program. By offering their time, experience, and knowledge to guide Scouts in one or more merit badge subjects, counselors help shape the future of our country. By assisting as the Scout plans projects and activities necessary to meet the merit badge requirements, and by coaching the Scout through interviews and demonstrations, the quality adult contact fostered by this working relationship can only enhance the Scout's self-confidence and growth.

What Is a Merit Badge Counselor?

A merit badge counselor serves as both a teacher and a mentor as the Scout works on the merit badge. Merit badge counselors should be satisfied that each Scout under their guidance meets all the requirements set forth for the merit badge. In this sense, a merit badge counselor is an examiner. In a larger sense, the real opportunity for a counselor lies in coaching—helping Scouts over the different hurdles of the requirements and helping make them aware of the deeper aspects of the subject from their knowledge and experience.

The merit badge counselor may help a Scout by providing instruction and guidance on the subject matter. However, the counselor must not complete the Scout's work on the requirements. The counselor needs to test the Scout to ensure that all the required work has been completed but may not modify the merit badge requirements in the process. This standard ensures that the advancement requirements are fair and uniform for all Scouts.

A merit badge counselor must always ensure that a Scout has a "buddy" present at all instruction sessions. Working on merit badges is especially enjoyable when Scouts work together, and the Scouting America encourages this by making the buddy system a part of the merit badge program. Together the two meet with merit badge counselors, plan projects, and keep their enthusiasm high. The Scout's buddy could be another Scout, a parent or guardian, brother or sister, relative, or friend. The Scout should bring a buddy to all appointments with the counselor.

Merit Badge Counselor Requirements and Registration

To qualify as a merit badge counselor, a volunteer must:

- Take Youth Protection.
- Register annually with Scouting America as a merit badge counselor.
- Be at least 18 years old.
- Be of good character.
- Be proficient in the merit badge subject by vocation, avocation, or special training.
- Be able to work with Scout-age youth.
- Be approved by the district/council advancement committee.

To register with Scouting America, a potential merit badge counselor must complete the Adult Application form and submit it along with the Merit Badge Counselor Information form to the local Scouting America council office. Renewal of this registration annually is necessary to continue as a merit badge counselor.

Scouting America requires every merit badge counselor to take the organization's Youth Protection training before working with youth. This program addresses strategies for personal safety awareness for youth as well as adults. Scouting America Youth Protection policies include:

- Two-deep leadership
- No one-on-one contact
- Respecting privacy
- Reporting problems

The Scouting America Youth Protection guidelines have been adopted primarily for the protection of youth members; however, they also serve to protect our adult volunteers and leaders from false accusations of abuse. Youth Protection training is available online at https://my.Scouting.org

The Merit Badge Process

The requirements for each merit badge appear in the current Scouting America merit badge pamphlet for that award and in the current edition of the Scouts BSA Requirements book, available at Scout shops and online. When a Scout has decided on a merit badge they would like to earn, they obtain from their Scoutmaster the name and phone number of the district/council-approved merit badge counselor. At this time, the Scoutmaster also can issue the Scout a signed Application for Merit Badge (blue card).

The Scout telephones the merit badge counselor to make an appointment, and together they schedule a date and time for the Scout and buddy to meet. The counselor suggests that the Scout bring the merit badge pamphlet, the Application for Merit Badge, and any work he has started or accomplished, and that he prepare by reading over the requirements.

At their first meeting, the merit badge counselor and the Scout decide upon a tentative schedule for completing the requirements. They should keep the Scout's other obligations (Scouting, school, worship, etc.) in mind, and set the dates, times, and locations for future meetings. The counselor will explain the requirements for the badge and help the Scout plan ways of fulfilling the requirements while getting the most out of the experience.

Merit badge counselors help Scouts meet the requirements for the merit badge. They may expand on the information in the merit badge pamphlet based on their knowledge, experience, and expertise in the subject. They are encouraged to tell about their own experiences that positively reinforce the subject matter, but new requirements or additional work may not be added. The Scout is expected to meet the requirements for the merit badge as stated—no more and no less.

The number of counseling sessions will depend on the difficulty of the merit badge requirements and the Scout's preparation and ability. The Scout and counselor are expected to meet as many times as is necessary for the Scout to complete the requirements for the badge. The advancement program allows the Scout to move ahead in their own way and at their own pace. Rather than competing against others, each Scout commits to a personal challenge of going as far as their ambition will carry them. The rate of advancement depends upon their interest, effort, and ability.

As the Scout completes each requirement, they are always tested (but with a buddy present), and as each requirement is completed, the merit badge counselor marks it on the application. When all the requirements for the merit badge are fulfilled, the merit badge counselor certifies that the Scout has completed the requirements. The Scout may return their completed Application for Merit Badge (blue card, if one is used) to their Scoutmaster.

Counseling Techniques

The most productive environment for the Scout when meeting with the merit badge counselor will be one in which the Scout feels welcome and relaxed. Start the conversation by finding out what the Scout already knows about the subject, then stimulate their interest by showing them something related to it. Be careful not to overwhelm the Scout. (Remember: The Scout is probably a beginner.) Establish an atmosphere that encourages the Scout to ask questions and to ask for help when they need it.

Spend some time helping the Scout learn the requirements, making sure they know they should do exactly what the requirements call for, whether "show" or "demonstrate," "make," "list," "discuss," "explain," or "collect, identify, and label." Take a genuine interest in their projects, and encourage the Scout to complete them.

Remember that the requirements must be completed exactly as presented—do not expand any requirement. However, the Scout may undertake more activities on their own initiative. The merit badge counselor can encourage this without pushing the Scout off course.

Encourage the Scout to practice for their review session and to reflect on their accomplishments. The Scout might approach the review process with some apprehension. The Scout is familiar with final exams in school and may see this meeting with the counselor as another such experience. The counselor can help by talking to the Scout

rather than grilling or examining them—there's a big difference, yet it still will be evident what the Scout knows. Expressing honest enthusiasm for the things the Scout has done will give them confidence.

During testing, the merit badge counselor may find that the Scout needs help learning a particular area. The counselor teaches the needed skill, and then retests to ensure the area has been learned.

Fast Facts for Merit Badge Counselors

- A merit badge counselor can counsel any Scout, including their own child—although this is discouraged in order to offer a Scout the chance to meet a diverse group of outstanding adults.
- A counselor may be certified in unlimited merit badge subjects, but must be approved for each one.
- There is no limit on the number of merit badges that a counselor may counsel with one Scout. However, the Scout will benefit the most from working with a variety of outstanding adults.
- Merit badge counselors may limit their services to one unit but still must be approved by the council advancement committee.
- Scoutmasters and assistant Scoutmasters are not automatically approved as merit badge counselors.
- Group instruction is acceptable, but each Scout must be tested and passed individually.
- There is no time limit for completion of merit badges, but all work on merit badges must be completed before the Scout's 18th birthday.

Summer Camp Merit Badge Counselors

The same qualifications and rules apply to counselors for council summer camp merit badge programs. All counselors must be 18 years or older, but qualified camp staff members under age 18 may assist the merit badge counselor with instruction. (These assistants are not qualified to sign off on a Scout's blue card, nor may they certify the Scout's completion of a merit badge.) As always, each counselor must maintain the exact standards as outlined in the merit badge requirements—nothing deleted, nothing added.

Partial completion of merit badges at summer camp should be credited to a Scout on the Application for Merit Badge (blue card) and given to their Scoutmaster at the end of the week.

Resources for Merit Badge Counselors

Scouting America's website is a primary source for all aspects of Scouting. Here's the link to merit badge counselor information: Everything You Need To Know About Being A Merit Badge Counselor.

The adult application form is used for all Scouting America volunteers, including merit badge counselors. Completion of the form is required of all merit badge counselors regardless of whether they have already registered in a different position. The Scouting Position code for merit badge counselors is 42.

The Merit Badge Counselor Information Form should be submitted along with the Adult Application. It specifies the subjects a counselor wishes to coach.

ADULT APPLICATION

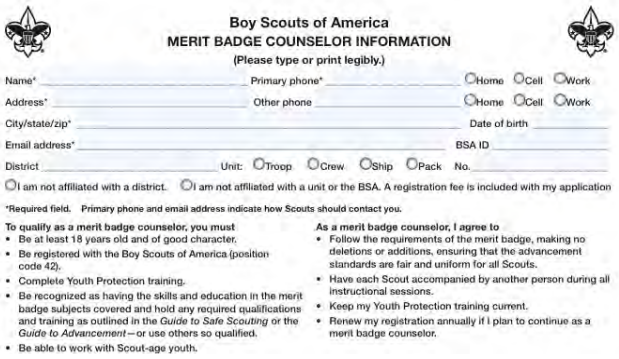
This application is also available in Spanish. Esta solicitud también está disponible en español.

MISSION

The mission of Scouting America is to prepare young people to make ethical and moral choices over their lifetimes by instilling in them the values of the Scout Oath and Scout Law.

Your participation in Scouting America can help youth become better citizens.

Adult leaders serve as important role models for youth in Scouting America and this application aids the chartered organization in selecting qualified adult volunteer leaders.



Boy Scouts of America

MERIT BADGE COUNSELOR INFORMATION

(Please type or print legibly.)

Name* _____ Primary phone* _____ ○Home ○Cell ○Work

Address* _____ Other phone _____ ○Home ○Cell ○Work

City/state/zip* _____ Date of birth _____

Email address* _____ BSA ID _____

District _____ Unit: ○Troop ○Crew ○Ship ○Pack No. _____

○I am not affiliated with a district. ○I am not affiliated with a unit or the BSA. A registration fee is included with my application

*Required field. Primary phone and email address indicate how Scouts should contact you.

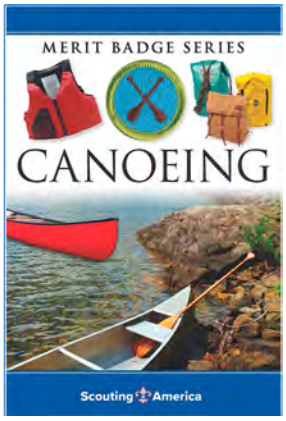
To qualify as a merit badge counselor, you must

- Be at least 18 years old and of good character.
- Be registered with the Boy Scouts of America (position code 42).
- Complete Youth Protection training.
- Be recognized as having the skills and education in the merit badge subjects covered and hold any required qualifications and training as outlined in the *Guide to Safe Scouting* or the *Guide to Advancement*—or use others so qualified.
- Be able to work with Scout-age youth.

As a merit badge counselor, I agree to

- Follow the requirements of the merit badge, making no deletions or additions, ensuring that the advancement standards are fair and uniform for all Scouts.
- Have each Scout accompanied by another person during all instructional sessions.
- Keep my Youth Protection training current.
- Renew my registration annually if I plan to continue as a merit badge counselor.

The **Guide to Advancement** and the **Guide for Merit Badge Counseling** are both available online. The first is the handbook for Scouters responsible for advancement at the council, district, and unit levels. It contains the current Scouting America advancement policies, procedures, rules, and regulations as well as other information. The second gives potential merit badge counselors an introduction to the program and the counselor's role.



Merit Badge Pamphlet Series The merit badge pamphlets are written for Scout-age youth. They are available for purchase in either print or digital formats. The information presented in the pamphlet will help the counselor understand what the Scout is studying and the level of learning expected by the Scouting America. At times, requirements may be updated before a new pamphlet is released. Counselors should always check the current requirements posted online prior to coaching a Scout. Once a Scout has started working on a merit badge, they may stay with the requirements that were in effect when they started.

Scouts BSA Requirements Updated yearly, this book contains the complete, official requirements for all the merit badges, ranks, and special awards. Requirements in this publication may be more current than the merit badge pamphlet. However, the latest versions are first available online.

Application for Merit Badge ("blue card") This three-panel, blue wallet-sized card shows that the Scout has permission to start working on a particular merit badge; records the Scout's progress; and, when completed, provides a separate record for the Scout, the counselor, and the unit. The council Advancement Committee may approve other means to record the same information.


APPLICATION FOR MERIT BADGE

Name _____

Address _____

City _____

is a registered

☐ Scout ☐ Venturer ☐ Sea Scout

of _____ No. _____

Troop, crew, ship

District _____

Council _____

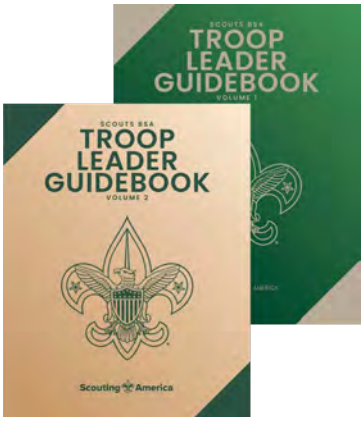
I have discussed this merit badge with this Scout and recommended at least one merit badge counselor.

Date _____ Signature of unit leader _____

Scouting America

34124

Scouts BSA Handbook This is the critical document for a Scout, providing the basic information for all facets of Scouting, including a chapter on the merit badge program.



Troop Leader Guidebook, Volumes 1 and 2 As the troop leader's primary guide, the two-volume Troop Leader Guidebook contains sections on advancement that include advice on recruiting merit badge counselors and other resources.

Appendix 3

Requirements and Application Forms

This text serves as the manual for the Scouting America Aquatics Supervision: Swimming and Water Rescue and Paddle Craft Safety programs. It also serves as a primary resource for the Mile Swim, Snorkeling, Kayaking, Boardsailing, and Whitewater Rafting awards. The requirements for each of those recognitions follow. Anyone interested in earning those should check with the local council for qualified instructors. Anyone interested in serving as an instructor needs to check with the council for the qualification procedure and additional support material.

Requirements for the Scouting America Scuba award are also given here, but both the participant and the instructor need to review additional guidance found on the back of the application. Counselors for the award must be certified scuba instructors and must follow the protocols of their certifying agency.

Requirements for the aquatics merit badges are found in the individual merit badge pamphlets and are summarized online at scouting.org.

Scouting America

Kayaking Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor _____

Address _____

City _____ State _____ Zip _____

Counselor qualification _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

Requirements

1. Before fulfilling the following requirements, successfully complete the Scouting America swimmer test.
2. Do the following:
   a. Describe various types of kayaks and how they differ in design, materials, and purpose.
   b. Name the parts of the kayak you are using for this exercise.
   c. Demonstrate how to choose an appropriately sized kayak paddle and how to position your hands.
3. Do the following:
   a. Tell what precautions must be taken for a safe trip afloat.
   b. Demonstrate how to select and properly fit a life jacket.
   c. Explain the importance of safety equipment such as life jackets, air bags, grab loops, and helmets.
4. Demonstrate your ability to aid yourself and others in the event of a capsize:
   a. Capsize your kayak in water at least seven feet deep, perform a wet exit if necessary, and swim the boat to shore.
   b. With assistance, if needed, ready the capsized craft for use.
   c. Show how to approach a capsized paddler in your kayak and tow him to shore.
   d. While upright in your kayak, right a capsized kayak, empty it of water, and assist the paddler aboard without returning to shore.
5. As a solo paddler, demonstrate the following:
   a. Entering and launching a kayak from shore or dock
   b. Landing or docking and exiting a kayak
   c. Forward stroke
   d. Sweep stroke
   e. Reverse sweep
   f. Draw stroke
   g. Rudder stroke
   h. Back stroke
6. As a solo paddler, do the following:
   a. Paddle forward in a reasonably straight line.
   b. Move the kayak sideways to the right and to the left.
   c. Pivot 360 degrees to the right and left.
   d. Stop the kayak.

Notes to Counselor:

Any youth or adult who is registered with a troop, crew, or ship and completes the requirements is eligible for a patch and recognition card, available from the local council service center. The completed award application should be handled as directed by the council Training, Aquatics, or other committee. Instruction for the Kayaking award is to be conducted under safe conditions on calm water. Two to four hours in one or more sessions should suffice for instruction and practice. Paddle lengths and life jacket sizes should be adequate to fit all participants. Feathered blades are preferred, but blades at the same angle are allowed. Information and skills are discussed in Aquatics Supervision: A Leader's Guide to Youth Swimming and Boating Activities, No. 34346, and the Kayaking merit badge pamphlet. All counselors must be trained in Safety Afloat. Any person with current training as a Scouting America Aquatics Instructor, an Aquatics Supervision: Paddle Craft Safety kayak instructor or as a kayak instructor by the American Canoe Association may serve as a counselor for this award with the approval of the local council. A person with similar experience in kayaking skills, safety, and instruction may also serve as a counselor with council approval. The Kayaking award is intended to provide Scouts and their leaders with an introductory experience to kayaking on lakes, ponds, slow-moving water, or calm ocean areas. Additional preparation is needed before a unit does extended kayak touring or takes trips on class I or above white water.

430-602

Scouting America

Snorkeling Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor _____

Address _____

City _____ State _____ Zip _____

Counselor qualification _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

Requirements

1. Before doing other requirements, successfully complete the Scouting America swimmer test: Jump feetfirst into water over the head in depth, level off, and begin swimming. Swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.
2. Discuss the importance of using the buddy system at all times while snorkeling and list duties of a buddy, beginning with equipment checks.
3. Explain the function, fit, and selection of mask, fins, and snorkel. Discuss the use of inflatable flotation vests and life jackets when snorkeling in open water.
4. In confined, shallow water (about waist deep), demonstrate use of mask and snorkel:
   a. Show how to prevent the mask from fogging and how to equalize pressure in mask, ears, and sinus cavities. With your head underwater, flood the mask, observe the effect on your vision, surface, and drain the water from the mask.
   b. With your face in the water, breathe through the snorkel. Then submerge, surface, clear water from the snorkel, and resume free breathing without removing the snorkel from your mouth.
5. In confined, shallow water, demonstrate the use of swim fins: Do first using only fins, and then repeat with a mask and snorkel.
   a. Fit and adjust fins to feet.
   b. Walk with fins as if entering from a beach.
   c. Swim at the surface (10 yards) and underwater (three yards) using the flutter kick.
   d. Control direction without using hands while swimming with fins at the surface and underwater.
6. In confined, deep water (six to 12 feet), demonstrate:
   a. Proper techniques for entering and exiting the water with snorkeling equipment from a dock or boat.
   b. Headfirst and feetfirst surface dives, including proper body position for safe ascent and descent.
7. Show knowledge of snorkeling signals:
   a. Demonstrate divers' signs and signals, both audible and visual, for use at the surface and underwater.
   b. Set out a diver down flag and explain its function.
8. In clear, confined water eight to 12 feet deep that has a firm bottom, while swimming with a buddy, use mask, fins, and snorkel to locate and recover an object from the bottom.
9. Demonstrate basic survival skills:
   a. Float facedown for five minutes while breathing through a snorkel with a minimum of movement.
   b. Demonstrate survival floating for five minutes without use of a snorkel.
   c. Using fins, show how to tow an exhausted or unconscious buddy to safety.
10. Review and explain the eight points of Safe Swim Defense applied to snorkeling. Explain training, preparations, and precautions required for snorkeling in open water. Explain environmental factors that affect snorkeling and discuss special precautions needed for oceans, streams, and lakes.
11. Explain pressure, buoyancy, and submerged optics and acoustics related to snorkel swimming and diving.
12. Discuss the effects of submersion on the body and how to handle potentially dangerous situations:
    a. What is hyperventilation and how is it avoided?
    b. What are the symptoms and consequences of hypothermia?
    c. Why is CPR training recommended for those participating in swimming and snorkeling activities?

(See Notes to Counselor on next page.)

Snorkeling: Notes to Counselor

The Scouting America Snorkeling award requirements introduce the special skills, equipment, and safety precautions associated with snorkeling; encourage the development of aquatics skills that promote fitness and recreation; and provide a foundation for those who later will participate in more advanced underwater activity.

Any youth or adult who is registered with a troop, crew, or ship and completes the requirements is eligible for a patch and recognition card. The completed award application should be handled as directed by the council Training, Aquatics, or other committee.

All counselors must have current Safe Swim Defense training and council approval. Anyone currently trained as a Scouting America Aquatics Instructor or certified as a snorkeling instructor by a Scouting America recognized scuba training agency may serve as a counselor for the Snorkeling award. Councils may also approve counselors who have been trained and are supervised by those with the previously listed credentials.

Instruction must be conducted in clear, confined water with a maximum depth of 12 feet. A swimming pool is recommended. The Snorkeling award is ideally suited to winter programs using indoor pools. Three 45-minute sessions are recommended for instruction, practice, and completion of requirements.

All aspects of Safe Swim Defense apply during instruction, practice, and all other snorkeling activities. Snorkeling in open water requires each participant to first demonstrate knowledge and skills equivalent to the Snorkeling award requirements.

Aquatics Supervision: A Leader's Guide to Youth Swimming and Boating Activities, No. 34346, provides reference material for Snorkeling instruction. Scuba training agencies, equipment manufacturers, and others occasionally publish references available online and through bookstores and dive shops. Although few dedicated snorkeling texts are available, instruction manuals for scuba diving contain pertinent information.

All requirements must be completed as stated on the application form. The counselor may not omit, vary, or add requirements. The skill requirements are listed in an order appropriate for instruction.

The second requirement considers the time-honored and time-proven principle of the buddy system. Snorkelers must use the buddy system at all times. Before beginning the activity, each person helps their buddy fit and check equipment. The principle of the buddy system is that two people can enjoy an aquatics activity together while each provides a critical margin of safety for the other. Each buddy must constantly be aware of the condition and circumstances of their buddy, and must always be prepared to call for aid or give immediate assistance if needed.

Scouting America

Scuba Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor* _____

Address _____

City _____ State _____ Zip _____

Agency qualification and scuba instructor number* _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

*The counselor must hold an instructor rating with current teaching status with an approved RSTC member organization in accordance with Scouting America scuba policies in the Guide to Safe Scouting. Counselors must have council approval.

Requirements

1. Before doing other requirements, successfully complete the Scouting America swimmer test. To begin the test, jump feetfirst into water over the head in depth, level off, and begin swimming. Swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn. After completing the swim, rest by floating.
2. Discuss the importance of using the buddy system at all times while scuba diving. Explain that a dive buddy is there to assist with the donning and doffing of equipment, to lend assistance in case of emergency, and to share in the underwater experience. Remember, always dive with a buddy—Never dive alone!
3. Review hazards associated with scuba diving, including causes of decompression incidents, and safety procedures to avoid them. Explain the importance of never using scuba equipment unless you are enrolled in a training exercise or have completed a diver certification program taught by a certified instructor.
4. State the purpose of the following pieces of basic diving equipment: mask, fins, BCD, BCD inflator, regulator, air gauge, and alternate air source.
5. Describe how to locate the air gauge, and explain how to recognize the "caution zone" on it.
6. Don and adjust mask, fins, snorkel, BCD, scuba, and weights with the assistance of a buddy, an instructor, or a certified assistant.
7. While underwater, demonstrate and recognize the following hand signals: OK?/OK!; Stop; Up; Down; Out of air; Come here; Ears not clearing; Slow down/Take it easy; Something is wrong; Watch me; Check your air supply.
8. Inflate/deflate a BCD at the surface using the low-pressure inflator.
9. In shallow water, demonstrate proper compressed air breathing habits; remember to breathe naturally and not hold the breath.
10. Clear the regulator while underwater using both exhalation and purge-button methods, and resume normal breathing from it.
11. In shallow water, recover a regulator hose from behind the shoulder while underwater.
12. In shallow water, clear a partially flooded mask while underwater.
13. Swim underwater with scuba equipment while maintaining control of both direction and depth, properly equalizing the ears and mask to accommodate depth changes.
14. While underwater, locate and read submersible pressure gauge and signal whether the air supply is adequate or low based on the gauge's caution zone.
15. Describe how to avoid hazardous aquatic life (if applicable to your confined water location).

(See Notes to Counselor on next page.)

Scuba: Notes to Counselor

All aspects of the Scuba award program must conform with the Scouting America scuba policy found in the Guide to Safe Scouting. Instructors not familiar with the Scouting program should consult the Scouting America manual, Aquatics Supervision: A Leader's Guide to Youth Swimming and Boating Activities, No. 34346, which also contains the Scouting scuba policy.

Counselors for Scuba award must hold current scuba instructor certification from a RSTC member organization listed in the Scouting America scuba policy. Instruction must comply with RSTC standards for introductory scuba experiences. Minimum standards include instructor-to-participant ratios. In a pool, the maximum ratio is eight participants per instructor. In a confined waterfront setting, the maximum ratio is four participants per instructor. Ratios may be increased by two participants if the instructor is assisted by someone certified as a divemaster or assistant instructor.

A second adult who understands the procedures should be present in case the instructor becomes incapacitated. Two-deep adult leadership is also required by Scouting America Youth Protection guidelines.

Before participants are allowed in the water, they must complete an Annual Health and Medical Record designed for scuba activities. Instructors should use standard forms advocated by their certifying agency.

Instructors may use agency materials, such as participant guidebooks, slide shows, and videos to help convey cognitive material. Skill instruction must be conducted in clear, confined water. A swimming pool is recommended. The Scuba award is ideally suited to winter programs using indoor pools. Two 45-minute sessions are appropriate for instruction, practice, and completion of requirements.

Although the Scouting America Scuba award is similar to introductory scuba experiences offered by various RSTC member organizations and other dive agencies, those programs are not substitutes for Scouting's Scuba award. All requirements must be completed as stated on the application form. The counselor may not omit, vary, or add requirements. In particular, the Scuba award has a prerequisite swimming requirement, is only available to youth and adults registered in the Scouts BSA, Venturing, or Sea Scout programs (minimum age around 10½), and does not include the option of an open-water dive.

Local council programs may not compress or sell air for scuba use, or sell, rent, or loan scuba equipment. All air and equipment for local council scuba programs must be obtained from properly licensed sources, not affiliated with Scouting America and under the supervision of RSTC-approved and certified scuba instructors.

Individuals completing the Scuba award requirements qualify for a recognition card and patch. The completed award application should be handled as directed by the council Training, Aquatics, or other committee.

The Scuba award program was created and implemented with assistance from International PADI Inc., www.padi.com.

430-604

Scouting America

Mile Swim Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor _____

Address _____

City _____ State _____ Zip _____

Counselor qualification _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

Requirements

1. Successfully complete the swimmer test: Jump feetfirst into water over the head in depth, level off, and begin swimming. Swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include at least one sharp turn.
2. Learn through discussion and application how skill, stamina, stroke selection, and pace influence distance swimming.
3. Pre-qualify for the mile by either swimming continuously for 1/4 mile or otherwise demonstrating ability to the satisfaction of a counselor approved by the local council.
4. Swim one mile under safe conditions over a course approved by the counselor supervising the swim.

Participant Notes

Swimming a mile without stopping is a significant accomplishment on your way to being proficient in the water. Are you ready? If you have done it before, you probably know the answer. If you haven't, then consider whether you can walk or bike on level ground for an hour or so without stopping. If you can, then you likely have enough stamina to swim a mile. The next question is whether you have the skill.

If you can meet the requirements for Swimming merit badge, then you likely have the skills needed to swim a mile, that is, the ability to swim a restful breaststroke, sidestroke, and elementary backstroke. If you have trouble completing the 100-yard swimmer classification test, then you are probably not ready for the mile.

How long will it take to swim a mile using one or more of those restful strokes? If you save energy by gliding after each stroke, expect to take an hour or more. If you were walking at a relaxed pace, you could probably cover around three miles in the same time. However, it generally takes more energy to pull and push yourself through the water than to walk. A secret to successfully swimming a mile is to use your energy wisely. If you typically swim a brisk front crawl with your head out of the water, then you may need to build endurance by swimming increasing distances over a long period. Using a fast, poorly executed swimming stroke to swim the mile is similar to trying to run full-out for a mile. Conditioned athletes can do so, but not the average person. That is why restful strokes at a relaxed pace are recommended over trying to stay ahead of another person swimming a fast crawl. Swim team members will be able to do a mile in less than 30 minutes without exhaustion. (The record is around 15 minutes.) However, they will have trained extensively to build their stamina and to swim as effectively as possible.

There is no time limit for swimming the mile, so take your time, particularly at the beginning so you don't wear yourself out too soon. As you near the end, you can speed up if you like if you aren't particularly tired. If you aren't struggling to keep going, then one of the challenges of swimming long distances is boredom. Feel free to sing silently to yourself, day dream, or otherwise keep your mind occupied. If you are swimming numerous laps in a pool, then it helps to have a buddy out of the water counting laps so you don't lose count.

Still not sure if you should attempt a mile? No problem. Try a quarter mile or so first, as indicated in requirement 3. If that tires you out, seek coaching tips to improve your skill, then practice regularly until you meet your goal. Swimming is excellence exercise and a great way to develop and maintain physical fitness throughout your life.

Mile Swim : Notes to Counselor

The Mile Swim recognition provides a sense of accomplishment and supports confidence, safety, skill, and physical fitness. The ability to swim long distances in warm water in time of need provides a margin of safety for all aquatics activities. Swimming skills and physical stamina are also needed to assist others. In addition to safety, Mile Swim should encourage the development of physical fitness by introducing youth to swimming as regular exercise. However, it is not a competitive training program limited to specific strokes that emphasize speed over efficiency. Swimming skills, including mastery of restful strokes, are as important to the program as endurance. Anyone who can walk a mile without stopping should have sufficient stamina to swim a mile with restful strokes. Just as walking is a viable exercise alternative to jogging or sprinting, restful swimming strokes used over long distances in place of a fast crawl can also play a positive role in physical conditioning.

Counselors for Mile Swim must be approved by the council. Adults trained as a Scouting America Aquatics Instructor, a Red Cross Water Safety Instructor, or a YMCA Swim Instructor are good candidates. Swim coaches with a Scouting background are also appropriate. All counselors must have current Safe Swim Defense training. participants. A second responsibility is to foster success. Requirements 2 and 3 are included to aid the counselor in that mission.

Many Scouts who have not been exposed to swimming merit badge skills will lack the ability needed to do a mile without training and practice. However, they may not realize their limitations.

The Participant Notes provide some background for requirement 2. A counselor may enhance the "application" part of that requirement with simple exercises if those are needed to prepare the Scout. The intent is to provide the Scout with simple drills that physically convey concepts. For example, showing how gliding reduces effort but increases time by seeing how few strokes are needed to cover a given distance. Also, how tired Scouts become swimming a given distance as fast as they can with a head-up crawl compared with swimming the same distance with a relaxed crawl using rhythmic breathing.

The intent of requirement 3 is to both prescreen applicants who are not ready, and to get those who are close over the hump. However, the counselor (or camp) is allowed flexibility. Competitive swimmers who regularly swim as part of a swim team need not be forced to do an extra quarter mile. The 400-yard swim for Lifesaving merit badge is close enough to a ¼ mile (440 yards) to serve, likewise the distance swim for lifeguard training should suffice if a Scout has that certification. Camps may allow those enrolled in Swimming merit badge instruction to substitute class attendance for the ¼ mile.

Ideally, anyone wanting to sign-up for the Mile Swim should be allowed to do so. However, camps are also allowed flexibility to limit participation based on resources, similar to how they meet requests for popular merit badges.

The continuous mile may be done using any combination of strokes and has no time limit. The swimmer may pause in deep water either by floating or treading water but may not rest by standing or holding to the side. Goggles may be worn, along with wet suits in cold water, but flotation devices are not allowed.

The continuous mile may be done using any combination of strokes and has no time limit. The swimmer may pause in deep water either by floating or treading water but may not rest by standing or holding to the side. Both open and flip turns are allowed in pools.

The mile may be covered by laps in a pool or at an enclosed waterfront swimming area. Both open and flip turns are allowed. There is no need to adjust the distance to compensate for pushing off the side.

Courses over extended distances in open water must conform to Safe Swim Defense guidelines regarding hazards such as submerged trees, currents, or boat traffic, as well as water quality, depth, and clarity.

Each individual swimmer, or at most a buddy pair, may be accompanied by a rowboat with two people onboard, one skilled in controlling the boat and the other trained in basic water rescue, equipped with a reaching device and a flotation aid, continuously watching the swimmer(s). The swimmer, not the boat, must set the pace.

Alternatively, a closed circuit may be established where all swimmers are constantly in reach of safety personnel strategically positioned at fixed points on boats, the shore, or piers. Each participant swims with a buddy, and the number and spacing of those in the water should not exceed the capacity of the watchers to easily count the swimmers as they move from one zone to another.

512-020

Scouting America

Stand Up Paddleboarding Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor _____

Address _____

City _____ State _____ Zip _____

Counselor qualification _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

Requirements

1. Review Safety Afloat policy. Explain to your instructor how this applies to stand up paddleboarding.
2. Before fulfilling other requirements, successfully complete the Scouting America swimmer test: Jump feetfirst into water over the head in depth, level off, and begin swimming. Swim 75 yards in a strong manner using one or more of the following strokes: sidestroke, breaststroke, trudgen, or crawl; then swim 25 yards using an easy, resting backstroke. The 100 yards must be completed in one swim without stops and must include one sharp turn. After completing the swim, rest by floating.
3. Explain safety considerations for stand up paddleboarding in the following environments: lake, moving water, white water, open ocean, ocean surf.
4. Review the characteristics of life jackets most appropriate for stand up paddleboarding and understand why one must always be worn while paddling. Then demonstrate how to select and fit a lifejacket for stand up paddleboarding.
5. Describe the correct type of leash to wear in the appropriate water venues.
6. Name and point out:
   a. The major parts of a stand up paddleboard
   b. The parts of a paddle for stand up paddleboarding
7. Discuss:
   a. The different types of stand up paddleboards
   b. How to correctly size and hold a paddle for stand up paddleboarding
8. Using a properly outfitted stand up paddleboard, demonstrate the following:
   a. How to safely carry a stand up paddleboard
   b. How to safely paddle away from a dock or shoreline (on knees)
   c. How to stand and balance on a board in the neutral position
   d. How to appropriately fall off a board
   e. How to remount the board
   f. Forward stroke
   g. Back stroke
   h. Forward sweep
   i. Reverse sweep
   j. Draw stroke
   k. One self-rescue technique—lay on your stomach and paddle with your hands
9. With supervision from your instructor, paddle a course that involves:
   a. A straight line for 25 yards and stop within one board length
   b. A figure 8
   c. Moving abeam to the right 10 feet and to the left 10 feet

Notes to Counselor

Any youth or adult who is registered with a troop, crew, or ship and completes the requirements is eligible for a patch and recognition card. The completed award application should be handled as directed by the council Training, Aquatics, or other committee. Instruction for the SUP award is to be conducted under safe conditions on calm water. One to three hours in one or more sessions should suffice for instruction and practice.

Information and skills are discussed in *Aquatics Supervision: A Leader's Guide to Youth Swimming and Boating Activities*, No. 34346. All counselors must be trained in Safety Afloat and have council approval. Any person with current training as a Scouting America Aquatics Instructor or as a SUP instructor by the American Canoe Association, or a person with similar experience in SUP skills, safety, and instruction may serve as a counselor.

Scouting America

Boardsailing Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor* _____

Address _____

City _____ State _____ Zip _____

Counselor qualification _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

Requirements

1. Before fulfilling the following requirements, you must successfully complete the Scouting America swimmer classification test.
2. Review how each point of Safety Afloat applies to boardsailing.
3. Explain precautions for the following environmental factors: dying wind, high wind, offshore winds, currents, waves, and lightning.
4. Discuss the prevention, recognition, and treatment of the following health concerns that could arise while boardsailing: hypothermia, sunburn, dehydration, and heat exhaustion.
5. Properly rig and prepare the sailboard you are using. Identify each of the following: uphaul, outhaul, downhaul, cleat, leach, tack, clew, foot, luff, skeg, centerboard, wishbone boom, and universal. Explain luffing. Explain how to steer the sailboard by adjusting the center of effort.
6. Demonstrate your ability to uphaul the sail, find the neutral position to the wind (sail luffing), and control the board's position with foot movement.
7. With supervision from your instructor, sail a course that involves beating, reaching, and running. Change direction by tacking into the wind.

Notes to Counselor

The Boardsailing award has been developed to introduce basic boardsailing skills, equipment, and safety precautions; to encourage the development of skills that promote fitness and safe aquatic recreation; and to lay a foundation for more advanced and demanding boardsailing activities. Any youth or adult who is registered with a troop, crew, or ship and completes the requirements is eligible for a patch and recognition card. The completed award application should be handled as directed by the council Training, Aquatics, or other committee.

All counselors must be trained in Safety Afloat and have council approval. Any person recognized as a boardsailing instructor by US Windsurfing or US Sailing, or someone with similar experience in boardsailing skills, safety, and instruction, may serve as a counselor for this award.

Instruction must be conducted on a protected body of water in an area free from other traffic or large waves. Initial water entry and practice should be on a gradual beach clear of hazards. A steady three-to-seven knot breeze is ideal for beginner practice. All participants should be close enough to supervisory personnel for efficient instruction and ready assistance.

All requirements must be completed as stated. Basic skills and safety precautions are presented in the Scouting America publication: Aquatics Supervision: A Youth Leader's Guide for Swimming and Boating Activities, No. 34346. Additional resources may be found online at www.uswindsurfing.org.

512-017

Scouting America

Whitewater Rafting Application

Name of applicant _____

Address _____

City _____ State _____ Zip _____

Unit type _____ Unit number _____ Council _____

Name of council-approved counselor _____

Address _____

City _____ State _____ Zip _____

Counselor qualification _____

Signature of counselor signifies
applicant has completed all requirements: _____ Date _____

Requirements

1. Before doing the following requirements, successfully complete the Scouting America swimmers test.
2. Do the following:
   a. Name the parts of a whitewater raft.
   b. Describe differences between a paddle raft and an oar-powered raft.
   c. Explain the importance of perimeter lines used on whitewater rafts.
   d. Demonstrate how to choose an appropriate size paddle.
   e. Demonstrate how to select and properly fit a life jacket.
   f. Demonstrate how to select and properly fit a helmet.
   g. Discuss the use of throw ropes in rescuing overboard paddlers.
   h. Discuss common river hazards including rocks, strainers, broaching, standing waves, hydraulics, and foot entrapment.
3. Explain the importance of safety equipment used in whitewater rafting including throw ropes, helmets, and life jackets. Also discuss appropriate clothing and footwear for a whitewater rafting trip.
4. Under proper supervision and appropriate conditions safely do the following:
   a. Lift, carry, launch, and land an inflatable raft, with help, on calm or slow-moving water.
   b. Sit in a raft as a paddler with proper foot position.
   c. Swim a Class I rapid while wearing a life jacket, helmet and attire appropriate for the water temperature. Demonstrate defensive and aggressive swimming positions as possible.
   d. Re-enter a raft from the water, with assistance if needed.
5. While on calm or slow-moving water, demonstrate the following strokes in an inflatable raft with at least one other paddler and on command of a qualified paddle captain:
   a. Forward
   b. Back
6. While on moving water up to Class I, demonstrate the following maneuvers with at least three other paddlers in an inflatable raft and on the command of a qualified paddle raft captain:
   a. Turn left.
   b. Turn right.
   c. Paddle forward in a straight line for 50 feet.
   d. Back paddle reasonably straight for 15 feet.
7. While on moving water up to Class I, demonstrate the following maneuvers with at least three other paddlers in an inflatable raft and on the command of a qualified paddle raft captain:
   a. A front or a back ferry.
   b. A shallow or a wide eddy turn.
   c. A shallow or a wide peel out.
8. Participate in a whitewater rafting trip in up to Class III white water with a qualified paddle raft captain in each raft using a minimum of two rafts and for at least one hour's duration.

(See Notes to Counselor on next page.)

Notes to Counselor

This award is available to Scouting America youth and adults who are members of Scouts BSA, Venturing, or Sea Scout units. Any adult leader, approved by the council, who is trained in Safety Afloat and can personally verify that all instruction and skill completions were directly supervised by a professionally trained or licensed rafting guide may serve as a counselor for this award. Such guides may be employed by council high-adventure programs or commercial outfitters. A review of representative skills and guidance for selecting a reputable rafting service is provided in the Scouting America publication Aquatics Supervision, No. 34346.

Scouting America Aquatics Supervision: Swimming and Water Rescue

Purpose

Training for Aquatics Supervision: Swimming and Water Rescue provides Scout leaders with information and skills to prevent, recognize, and respond to swimming emergencies during unit swimming activities. It expands the awareness instruction provided by Safe Swim Defense training. Persons completing the training should be better able to assess their preparation to supervise unit swimming events. Scouting America recommends that at least one person with this training is present to assist with supervision whenever a unit swims at a location that does not provide lifeguards. This training is open to any registered adult leader, Scouts BSA, Venturer, or Sea Scout who is age 15 or older. A council-approved instructor must directly supervise all training. The course takes approximately eight hours and is valid for three years. Course presentation must follow the online instructor guide.

Although the training is consistent with training provided professional lifeguards, the Swimming and Water Rescue course is not a lifeguard training course and is not a substitute for professional lifeguard training for summer camp aquatics staff. On the other hand, this course addresses important information that may not be covered in generic lifeguard training programs such as: preventative measures, including the buddy system and swim classification tests; how to set up a safe swim area in diverse situations; the use of non-standard rescue equipment; and emergency action plans in remote settings. Therefore, Scout leaders with lifeguard training from other agencies are encouraged to complete this course prior to supervising unit swim activities in remote settings. A "challenge" option is provided to foster cross-training of individuals with training from other agencies.

Adult and youth first aid training, including CPR, is an important safety consideration for all Scouting activities, not just swimming. First aid training is not included in the Swimming and Water Rescue course with the expectation the leader has addressed this need separately, as noted in the course material and on the training card.

Prerequisites

1. **Age, physical fitness, and training:**
   - A. Be 15 years old or older prior to training.
   - B. Submit written evidence of physical fitness.
   - C. Complete Safe Swim Defense training.
2. **Swimming ability:**
   - A. Complete the 100 yard Scouting America swimmer test.
   - B. Recover a 10-pound weight from 8 feet of water.

Requirements

3. Administer both the Scouting America beginner and swimmer classification tests.
4. Demonstrate reaching assists from deck, side, and shallow water using items such as arms, legs, towels, rescue tubes, and poles.
5. Twice demonstrate throwing assists using items such as lines, ring buoys, throw bags, and free-floating supports. Successfully place at least one such aid within reach of a subject 25 feet from shore.
6. Demonstrate stride jump and compact jump entries into deep water.
7. Demonstrate an accompanied rescue for a conscious subject in deep water 20 feet from shore. Enter the water with a buoyant aid, present the aid to the subject, release it, and accompany the subject to shore. Speak to the subject throughout the assist to provide clear instruction and encouragement.
8. Demonstrate a contact rescue for an unconscious subject at or near the surface in deep water 20 feet from shore:
   - A. Approaching the subject from the front, use a wrist tow to move the subject to shore. During the approach, confirm that the subject is passive.
   - B. Approaching the subject from the rear, use an armpit tow to move the subject to shore. During the approach, confirm that the subject is passive.
   - C. With the assistance of one other person, and without the aid of a backboard, remove an unconscious subject from the water at the edge of the pool or pier and check for breathing and circulation.
9. Practice in-water rescues of both conscious and unconscious subjects using a variety of flotation aids.
10. Demonstrate the following defensive actions:
    - A. Front head-hold escape
    - B. Rear head-hold escape
11. Demonstrate a line-and-tender rescue as both the swimmer and the line tender.
12. Demonstrate in-line stabilization for a suspected spinal injury in shallow water:
    - A. For a faceup subject
    - B. For a facedown subject
13. Correctly answer 80 percent of the questions on the Swimming and Water Rescue written exam covering Safe Swim Defense, emergency action plans, surveillance, victim recognition, and water rescue. Review any incomplete or incorrect answers.

Scouting America Aquatics Supervision:

Paddle Craft Safety—Basic

Purpose

Float trips are popular Scouting activities for older youth. Safety Afloat awareness training provides guidelines for safe float trips and is required of unit leaders, but does not provide the skill training mandated by those guidelines. Aquatics Supervision: Paddle Craft Safety—Basic expands Safety Afloat training to include the skills, as well as the knowledge, needed for a unit leader to confidently supervise canoeing or kayaking excursions on flat water. Persons completing the training should be better able to access their preparation to supervise paddle craft activities. The training is open to any registered adult leader, Scouts BSA, Sea Scout, or Venturer, who is age 15 or older. The training must be conducted by a council-approved instructor, takes roughly eight hours, and is valid for three years. Course presentation must follow the online instructor guide.

Adult and youth first aid training, including CPR, is an important safety consideration for all Scouting activities, not just boating. First aid training is not included in the Paddle Craft Safety course with the expectation that the leader has addressed that need separately, as noted in the course material and on the training card.

Float trips that last overnight also require camping skills. Because Scouting emphasizes outdoor skills in many programs, only items specific to canoeing or kayaking are reviewed in the course material.

Prerequisites

1. **Age, physical fitness, and training:**
   a. Be 15 years old or older prior to training.
   b. Submit written evidence of physical fitness.
   c. Complete Safety Afloat training.

2. **Swimming ability:**
   Complete the 100 yard Scouting America swimmer test.

Requirements

3. Personal safety skills:
   a. Select a life jacket of appropriate size and demonstrate proper fit.
   b. Demonstrate the feet-up floating position used if caught in a current.
   c. Demonstrate H.E.L.P. and Huddle positions.
   d. Capsize and swim a boat to shore.

4. Basic boating skills: Demonstrate the following maneuvers on calm water using standard stroke techniques:*
   a. Transport boat from rack or trailer to water's edge.
   b. Safely board and launch the craft.
   c. Travel in a straight line for 50 yards.
   d. Stop the craft.
   e. From the stop, move the boat sideways, first to the right, then to the left.
   f. From the stop, pivot the boat to the right, then to the left.
   g. Return to shore along a curved course demonstrating both left and right turns while under way.
   h. Land, safely exit, and store the craft.

5. Group safety skills:
   a. Throw a rescue bag, laying the line within 3 feet of an object 30 feet away.
   b. Demonstrate a boat rescue of a swimmer.
   c. Demonstrate an on-water boat-over-boat assist.

6. Correctly answer 80 percent of the questions on the Paddle Craft Safety written exam covering Safety Afloat, trip preparation, emergency action plans, and basic boating knowledge. Review any incomplete or incorrect answers.

*Skills may be demonstrated either tandem in a canoe or solo in a kayak. If a tandem canoe is used, each participant must demonstrate the maneuvers from both bow and stern positions.

Scouting America Aquatics Supervision:
Paddle Craft Safety—River

Purpose

The Basic Paddle Craft Safety training provides an introduction to flat water canoeing and/or kayaking. The River modules extend that introduction to moving water. Any unit planning river trips in canoes or kayaks should be well served by leaders who complete those modules. Details are provided in the same Instructor Guide used for the basic modules.

Requirements

1. Prerequisites:

   a. Submit written evidence of physical fitness.

   b. Have current Safety Afloat training.

   c. Have current training in Aquatics Supervision: Paddle Craft Safety—Basic for the appropriate craft.

   d. Demonstrate or provide evidence of current ability to complete the 100-yard Scout *Swimmer* classification.

2. View and discuss the video "Reading the Rhythms of Rivers and Rapids."

3. Do the following during an instructor-led canoe or kayak trip of at least three miles down a flowing river with Class I or Class II features, including standing waves, a downstream V, and a large eddy. A segment that includes isolated Class II+ or Class III rapids that can be portaged is appropriate, but not necessary. Features and water levels must be consistent with the safe performance of the requirements.

   a. Transport boat from trailer or carrier to river's edge. Safely board and launch the boat into a current.

   b. Review the effect of basic flat-water strokes in moving water, demonstrating the ability to stay parallel with the current.

   c. Demonstrate knowledge of river signals to communicate with other boats.

   d. Perform a controlled swamp in a current, safely exit the craft, and guide it to shore.

   e. Swim feetfirst in a current without a boat and catch a throw bag deployed from shore.

   f. Successfully deploy a throw bag to a person fulfilling requirement 3E.

   g. If canoeing, demonstrate a cross draw stroke. If kayaking, demonstrate a low brace.

   h. Demonstrate ability to cross the current using a front ferry.

   i. Demonstrate an eddy turn.

   j. Demonstrate peel out of an eddy.

   k. Stop above a rapid indicated on a river map. Scout the rapid to determine how best to run the rapid and then run it.

   l. Stop above a hole, low-head dam, or other feature indicated on a river map. Scout and portage the feature, even if it can be safely run.

   m. Land, safely exit, and load the boat for transport.

4. Write a float plan for a troop, crew, or ship covering the stretch of river used for training.

530-501