

BOY SCOUTS OF AMERICA
MERIT BADGE SERIES

PIONEERING



"Enhancing our youths' competitive edge through merit badges"



BOY SCOUTS OF AMERICA®

Note to the Counselor

Before counseling Scouts, Pioneering merit badge counselors must become familiar with the *Guide to Safe Scouting*, an essential planning tool for all Scouting volunteers. The *Guide to Safe Scouting* provides an overview of Scouting policies and procedures. Unit leaders are also expected to review the additional reference materials cited (such as the *Scouts BSA Handbook for Boys*, *Scouts BSA Handbook for Girls*, and the *First Aid* merit badge pamphlet) before conducting certain activities. Counselors can access the *Guide to Safe Scouting* online at www.scouting.org/health-and-safety/gss/.

Counselors should also ensure that Scouts follow the principles of Leave No Trace in their pioneering projects. Just as hiking and camping without a trace are signs of expert outdoorsmanship, protecting the environment is a mark of responsible pioneering. Minimize impacts to the land. Use your judgment and experience to help Scouts tailor their pioneering projects to the environment where the activities will occur.

To help keep participants safe during Scouting activities, the Boy Scouts of America has an established set of procedures for physical activities called the “Sweet 16 of BSA Safety.” In an effort to assist Pioneering merit badge counselors, the following considerations provide additional guidance of special interest to them.

Qualified Supervision. The Pioneering merit badge counselor should have knowledge of the proper use of pioneering project tools and equipment, structural limitations, and fall protection appropriate for projects.

Safe Area or Course. Counselors should take reasonable measures to provide participants with a safe outdoor environment.

Equipment Selection and Maintenance. Counselors should ensure project building tools and equipment are well-maintained and in good condition. Ropes, anchors, and spars should be checked prior to each use.

Safety Procedures and Policies. Counselors must ensure compliance with safety procedures for certain projects such as controlled access of participants, compliance with Safe Swim Defense for projects located over water, and adherence to the 6-foot height limit for pioneering projects. (See “Working at Heights and Elevations” in the *Guide to Safe Scouting*.)

Discipline. Counselors should take reasonable measures to ensure all participants are using pioneering tools and equipment properly.

The Sweet 16 of BSA Safety procedures are accessible online by visiting www.scouting.org/health-and-safety/gss/sweet16/.

Because this pamphlet will be used throughout the United States, merit badge counselors should understand that not every method can be fully described here. Different parts of the country might use other names for a knot, a method, or a piece of equipment. Counselors may employ other methods described and illustrated in other Scouting literature, provided that no requirements are omitted, added, or altered in order to accommodate them.

Some pioneering skills or methods called for in the requirements will take practice and time to master. Therefore, having multiple hands-on sessions to earn the merit badge is advisable. The term “demonstrate” in the requirements means just that—it should be made clear that the Scout has learned the skill and has the ability to use it.

Keep in mind that, because of equipment availability, parts of some requirements might have to be done at summer camp, at district or council events, or on a troop camp outing. In such cases, *the person conducting the review and approving any partial completion must be approved to do so by the local council.*

The appearance of a finished project or structure is not as important as the correctness of individual knots and lashings. The project should be judged for its structural soundness, to determine if it was built to safely withstand the use for which it was intended. Only the approved designs shown in this pamphlet or other official Boy Scouts of America literature are recommended.

In earning this merit badge, the Scout has a chance to learn skills that will be useful in a wide variety of Scouting and non-Scouting activities. These skills should become an ongoing part of a Scout’s advancement and growing participation in new and challenging adventures. Earning the Pioneering merit badge could equip the Scout to later teach younger Scouts, or could add another dimension to the Scout’s value as a camp staff member.

Planning ahead, making certain as you go, and ensuring safety go hand in hand with the Scout motto, Be Prepared. In pioneering, discipline is essential. Pioneering is a challenge that can instill long-term habits of doing things right the first time.

Requirements

1. Do the following:
 - a. Explain to your counselor the most likely hazards you might encounter while participating in pioneering activities and what you should do to anticipate, help prevent, mitigate, and respond to these hazards.
 - b. Discuss the prevention of, and first-aid treatment for, injuries and conditions that could occur while working on pioneering projects, including rope splinters, rope burns, cuts, scratches, insect bites and stings, hypothermia, dehydration, heat exhaustion, heatstroke, sunburn, and falls.
2. Do the following:
 - a. Demonstrate the West Country method of whipping a rope.
 - b. Demonstrate how to tie a rope tackle and the following knots: clove hitch formed as two half hitches, clove hitch on a bight, butterfly knot, roundturn with two half hitches, and rolling hitch.
 - c. Demonstrate and explain when to use the following lashings: square, diagonal, round, shear, tripod, and floor lashing.
3. Do the following:
 - a. Using square and tripod lashings from requirement 2c, build a Tripod Wash Station (or with your counselor's permission, another camp gadget of your own design).
 - b. Using rolling hitches or roundturns with two half hitches, and round lashings from requirements 2b and 2c, build a 15-foot Scout Stave Flagpole (or with your counselor's permission, another camp gadget of your own design).

- c. Using shear, square, and floor lashings, clove hitches on a bight, and rope tackles from requirements 2b and 2c, build a Simple Camp Table (or with your counselor's permission, another camp gadget of your own design).
4. Explain the differences between synthetic ropes and natural fiber ropes. Discuss which types of rope are suitable for pioneering work and why. Include the following in your discussion: breaking strength, safe working loads, and the care and storage of rope.
5. Explain the uses for the back splice, eye splice, and short splice. View a demonstration on forming each splice.
6. Using a rope-making device or machine, make a rope at least 6 feet long consisting of three strands, each having three yarns. Whip the ends.
7. Explain the importance of effectively anchoring a pioneering project. Describe to your counselor the 3-2-1 anchoring system and the log-and-stake anchoring system.
8. Describe the lashings that are used when building a trestle, how the poles are positioned, and how X braces contribute to the overall structural integrity of a pioneering project.

All pioneering projects must comply with height standards as outlined in the *Guide to Safe Scouting*.

9. Working in a group, (or individually with the help of your counselor) build a full size pioneering structure, using one of the following designs in the merit badge pamphlet.
 - Double A-Frame Monkey Bridge
 - Single A-Frame Bridge
 - Single Trestle Bridge
 - Single Lock Bridge
 - 4x4 Square Climbing Tower
 - Four Flag Gateway Tower
 - Double Tripod Chippewa Kitchen
 - Another type of structure approved in advance by your counselorCarefully plan the project, assembling and organizing all the materials, referring to the points under Safe Pioneering, and complying with the height restrictions in the *Guide to Safe Scouting*.

Pioneering Resources

Scouting Literature

Scouts BSA Handbook for Boys; Scouts BSA Handbook for Girls; Guide to Safe Scouting; Deck of First Aid; Emergency First Aid pocket guide; *Wilderness First Aid Manual; Wilderness First Aid Field Guide; Knots* pocket guide; *Deck of Knots; Knots and How to Tie Them; Camping, Climbing, First Aid, Model Design and Building, Textile, and Woodwork* merit badge pamphlets

With your parent's permission, visit the Boy Scouts of America's official retail website, www.scoutshop.org, for a complete listing of all merit badge pamphlets and other helpful Scouting materials and supplies.

Books

Ashley, Clifford W. *The Ashley Book of Knots*. Doubleday, 1993.

Bigon, Mario, and Guido Regazzoni. *The Morrow Guide to Knots*. William Morrow, 1982.

Budworth, Geoffrey. *The Ultimate Book of Everyday Knots*. Skyhorse Publishing, 2012.

Budworth, Geoffrey. *The Ultimate Encyclopedia of Knots and Ropework*. Southwater, 2010.

Jarman, Colin. *The Knot Tying Bible: Climbing, Camping, Sailing, Fishing, Everyday*. Firefly Books, 2013.

Pawson, Des. *Handbook of Knots*. DK Publishing, 2004.

Pawson, Des. *Knot Craft: 35 Ropework Projects*. Paradise Cay, 2011.

Pawson, Des. *Knots: The Complete Visual Guide*. DK, 2012.

Penn, Randy. *The Handy Box of Knots: Useful Knots for Every Situation, Indoors and Out*. Sterling Innovation, 2008.

Perry, Gordon. *Knots*. Whitecap Books, 2006.

Perry, Gordon. *Knots: A Practical Step-by-Step Guide to Tying Over 100 Knots*. Metro Books, 2003.

Salvadori, Mario. *The Art of Construction: Projects and Principles for Beginning Engineers & Architects*. Chicago Review Press, 2000.

Sweet, John. *Scout Pioneering*. Scout Association, 1974.

Toghill, Jeff. *Knots & Splices*. Sheridan House, 1998.

Toss, Brion. *The Complete Rigger's Apprentice: Tools and Techniques for Modern and Traditional Rigging*. International Marine/Ragged Mountain Press, 2016.

Online Resources

First Aid merit badge pamphlet, <http://scoutlife.org/merit-badges/first-aid-merit-badge/>

Guide to Safe Scouting, www.scouting.org/health-and-safety/gss/