

JUNE: EVERYTHING YOU DO IS ALREADY STEM

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BRYAN: Welcome to the June ScoutCast, listeners! I'm *Bryan on Scouting* blogger, Bryan Wendell and with me, as always, is Lee Shaw, Team Lead of National Alliance. Hey, Lee.

LEE: Hey, Brian, how ya doing? So, way back in March of 2015, my former cohost Paula did an episode about introducing STEM into your unit, and we talked about some pretty cool STEM activities.

BRYAN: I wasn't a host back then; I was just a fan. I listened to that episode and, Lee, I know that since then STEM has gotten even hotter, and 3 years since you did that episode, units are really taking their activity to the next level, and a lot of those activities are STEM related, aren't they?

LEE: And it's possible that, they don't realize it's STEM; it's just them just having fun.

BRYAN: Yeah. They are just having fun, and some of that fun could make them eligible to earn STEM Awards, so that takes us to today's topic.

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BRYAN: We invited Emily Campbell to show us the way STEM can be integrated into stuff you're already doing. She's the author the Big Rock Topic in the Roundtable Guide as well as Assistant Council Commissioner for Roundtables in the Gulf Coast Council in Pensacola, Florida. Hey, Emily, Welcome to ScoutCast.

EMILY: Hi. Thanks for having me.

BRYAN: So, first, let's just get the basics out of the way. Can you remind everybody what STEM is and what the BSA's focus with STEM entails?

EMILY: Absolutely. STEM is a, just a simple acronym that stands for science, technology, engineering and mathematics. The BSA stance is we're encouraging the Scouts to be excited and be interested about something that they have a passion for.

LEE: Just out of curiosity, what's the difference between science and technology?

EMILY: It's actually kind of interesting. Science is all about questioning, talk about hypothesis and then we test the outcome and all those sorts of things. Technology is about solving problems., I'm a classroom teacher by trade, and in my classroom my students learned about the Gold King Mine spill in 2015, as it was happening, and they got really interested and they decided they wanted to learn how to try and create something as a filter to remove some of the toxins that were coming out of the Animas River. That's technology. You see a problem; you try and solve it. Science is all about, huh, I have this big question. I wonder if I can do it. So, I make the hypothesis and I try and test it to either see if it comes true or not.

LEE: Well, Emily, that just explains why you're such an awesome teacher, because you walked me through that as if I were your student, and I now have a better understanding, so thanks so much. We appreciate it.

BRYAN: Yeah, we both learned something there, Lee. So, Emily, what uh, if we could go through each letter of the STEM acronym and just briefly talk about some activities that troops are already doing for each of those, I think that would be really interesting for our listeners.

EMILY: We talk about S, science. You're talking about some of the merit badges: Astronomy, Bird Study, Cooking. Cooking is a science, it's chemistry. It's all about learning what kind of things mesh together. You're looking at, temperature. Cooking is amazing.

Technology is all about problem-solving, so Signals, Signs and Codes is a good merit badge. Traffic Safety that's a good one. In fact, I believe there was an Eagle Scout that was trying to solve some problems in his own community with traffic safety.

BRYAN: And used technology to do so, you're right, yeah.

EMILY: Yep. Robotics. I've seen youth create a robot that helped people with disabilities. Inventing is a big one since it's one of our newer merit badges. That one's kind of cool because what do inventors do? *(Pause)*

BRYAN AND EMILY: *(Voices overlap.)* They solve problems, yeah.

EMILY: Engineering, we're looking at Pioneering and Surveying, Welding, making sure that all of our pieces and parts we're using in a big bridge is gonna be structurally sound. As the youth are doing this, they're pioneering, they're creating their knots and they're making, weather rocks to see what the weather is like. That's engineering.

Mathematics, you've got Scuba Diving, Model Design, Plumbing. Oh, Personal Management, that's a big one! That's an Eagle-required merit badge. It's all about trying to be able to fit that mathematics. It's not just learning the equations like you do in school; it's how does that actually apply in your real life.

BRYAN: That's interesting. You've taken some merit badges that I didn't even think of having a STEM component and opened my eyes that there are requirements that really align with the STEM principles, so that's awesome.

LEE: Emily, how does the STEM program fit when it comes to rank advancement?

EMILY: With rank advancement, you have all of the different levels of leadership and whatnot, but you also have the merit badges, and that's kind of an important piece. And a lot of our merit badges, believe it or not, are STEM related, whether we realize it or not: Plant Science, Bird Study, Traffic Safety, Digital Technology, Inventing, Plumbing, Scuba Diving...

BRYAN: So, a lot of these things that troops are already doing that might earn them a merit badge and might have a STEM connection that we don't know about can earn them some awards. Can you go over like what those awards are and where people could get started earning them?

EMILY: Oh, absolutely! There's this awesome program that we have that's called the Nova Award, and it's for all of the different programs, so Cub Scouts, Scouts and Venturing. It's really cool because there's two different levels that you can work on. You can do the Nova Award which is one piece where they learn about something. So, if we look at the the Woosh! one, you're watching 3 hours of engineering-related show or documentaries that are involving motion or motion-inspired technology, you're looking at one of the merit badges. You may have already earned a merit badge or you're working on the merit badge like robotics. And as you're working through that robotics merit badge you're also looking at part of the

requirements of the Nova Award. It might be an extension of the merit badge, but that's kind of the cool thing is that you do a little bit more and you earn this amazing award. The second half of that is the Supernova Awards, and those ones are a little bit more intense, and you definitely have to have a mentor when you're working through that. So, think about a Hornaday Award Adviser or an Eagle Rank Adviser that's going through, making sure that you're doing all these pieces and parts in order to be able to earn it. That's what that mentor is doing for the Supernova Award.

LEE: You mentioned something, the Whoosh! that I'm not familiar with. Can you tell me what that is?

EMILY: The Whoosh! is actually a module of the Nova Award, and it's one of the pieces that they can use in order to learn and explore about how engineering affects youth's life every day.

LEE: Thank you.

BRYAN: At what point does a STEM mentor or counselor get involved in that process and who approaches whom there? Does the Scout find the mentor or does the mentor maybe make an announcement to the entire troop? What's your recommendation there?

EMILY: My recommendation is that the unit already have adults that are interested in becoming Nova Counselors or Supernova Mentors, and maybe have a Nova Program Chair or a STEM Chair that's in the troop or in the pack or in the crew. They're the ones that are available for those youth that want to focus on doing a little bit more with the STEM. It could be either way, where there is an announcement saying, "Hey, we're gonna work on this as a unit," or the youth is interested in doing it and they are the ones that

approach the adult. Scoutmasters should have some sort of a list. Just like we have lists for Merit Badge Counselors, we will have lists for those Nova Counselors as well.

LEE: Can someone mentor an entire unit?

EMILY: Well, it depends. If you're a counselor, counselors could be part of that and you don't have to be entrenched in that specific job. So, you don't have to have a degree in electrical engineering in order to become a counselor. You just need to be able to take the adult trainings that are offered. There's both the Nova Counselors Training and the Supernova Mentor Trainings. Councils and districts should be able to provide that training to be the adult leaders in order to be able to help out their units.

LEE: I guess what I'm really hearing from you is, we don't need to overcomplicate it.

BRYAN: So, what are the requirements to be a STEM – do I have it right? It's Nova Counselor and Supernova Mentor?

EMILY: Correct.

BRYAN: Okay. So, what are the requirements? I assume they would need to be Youth Protection Trained. Do they need to be registered in the unit, and you've touched on this a little bit briefly, but do they have to have a degree in whatever field is applicable?

EMILY: What we're looking at is that they need to be Youth Protection Trained, they need to be registered in the council or the district, or the unit. You don't have to have a counselor that is focused on just the unit. Like Merit

Badge Counselors, they can work with everybody either in the district or in the council. Nova Counselors and Supernova Mentors can do the same thing. And then there's the trainings that we have for that specific group of people.

BRYAN: So, there is no requirement as far as a degree or they don't have to demonstrate proficiency as an astronomer or something like that to be a mentor for a certain award.

EMILY: You know hobbyists - they may not have a degree but, they're very adequate in being able to teach astronomy. Sometimes the passion transfers over to the youth that are being mentored by them versus, having a PhD in astrophysics. That would be great but it's not a requirement.

LEE: All right. I know you've piqued the interest of our audience; are there resources available to find more STEM activities and the awards that can be earned?

EMILY: Oh, absolutely! The BSA has an awesome website specifically on the STEM and Nova Award, so if you just go to Scouting.org and look up "STEM Nova Award," they've got all the requirements, all the cool stuff. They have council support units for district support. At the Philmont Training Center this year during week 7, which is July 22nd through the 28th, there is STEM-Tastic Scouting: Inspiration, Imagination and Innovation," and that's an adult training but they also have a secondary class which is #Awesome STEM Exploration, and that's for youth that's 14 to 20 years old. Last year they had a blast. They went into the back country, and when they were talking about geography, they weren't (just) talking about it, they were living geography.

BRYAN: So, Emily, here's a philosophical question for you. Historically Scouting was about building fires and tying knots so why is the BSA focusing on STEM so much why is this such a priority to introduce young people to these STEM concepts?

EMILY: Well, I don't necessarily think that it is a new concept because while they were tying knots they were also pioneering. That's engineering. That's also mathematics, trying to figure out the trajectory of what you're gonna do with different things that you're building. In roundtables we look at some of the materials the BSA put out from the 1980s, and even to the 1950s I've gotten some really good technology stuff out of those, those books. So, looking back at the historical pieces and parts, we're actually pulling that information today and using it because it's still a good resource.

BRYAN: Interesting. So is there anything else that you wanted to mention about STEM that we haven't yet asked you and you wanted to make sure to share with our ScoutCast family here?

EMILY: Inspire your youth because they're our future and if they get excited about what you happen to mention, they could earn that PhD in something STEM related and become a mover and a shaker and an innovator because they were in Scouts.

BRYAN: Well, Emily, we learned a lot. This has been an educational experience for us, so as an educator, job well done there. And now we know that these Supernova and Nova Awards can be earned by doing a lot of the stuff that you're already doing within your unit, which makes it a lot less daunting for leaders out there. So, we want to thank you for sharing all this enlightening information with us today and for joining us on ScoutCast.

EMILY: Thank you so much for having me.

LEE: Now let's take a short break with a Safety Moment. Then we'll be right back with Reminders and Tips.

(June Safety Moment– Poisonous Plants)

BRYAN: Okay, folks, here we go with this month's reminders. It's summer, so your troop should be camping, and it doesn't matter where or for how long. Just go camping! After all, that's what Scouts are known for, right?

LEE: And in case you forgot, there's still time to earn the William T. Hornaday Award. The Hornaday Award Program encourages learning about natural resources, conservation, and the environment. More information about the awards can be found on [Scouting.org slash awards underscore central](https://www.scouting.org/awards/underscore-central).

BRYAN: That Hornaday Award, well, it's even rarer than the Eagle Scout Award. I thought that was pretty cool. And it's often referred to as a "Gold Medal awarded by the Earth." You can meet a few recent Hornaday Award recipients in the May-June 2018 issue of *Scouting* magazine.

LEE: And June is the *Boys' Life* special fishing issues. I have to tell you, I've got quite a few fishing tales of my own, but join me in reading about a troop from Pennsylvania that traveled across the country to Rocky Mountain National Park, where they were in hot pursuit of an elusive species of bass. Also, pro fisherman Tom Reddington shares his tips for fishing in an urban setting.

BRYAN: I'm going to share my tip about fish in an office setting, and that is don't reheat fish in the office microwave. I had a coworker do that recently and it wasn't a pretty sight.

Begin Music Under

BRYAN: You can check out those articles and more right now, because we're at the end of our June ScoutCast. We want to thank our guest, Emily Campbell, for joining us.

LEE: And thanks to you for listening. Be sure to tune in next month for everything you need to know about Recruiting Campaigns. Believe me when I tell you, there's some pretty exciting ideas for the digital age. Until next time, I'm Lee Shaw.

BRYAN: And I'm Bryan Wendell. And if you have an idea for a discussion on future ScoutCast episode, we want to know about it. Just send us an email to Scoutcast@Scouting.org or you can tweet us. @BSA ScoutCast is the handle on Twitter. We look forward to hearing from you.

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