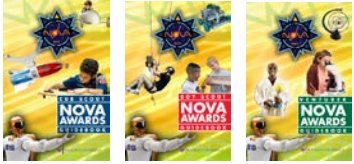


Becoming a STEM Supernova Mentor – The Basics

Overview of BSA’s STEM Initiative

In summer of 2012, BSA rolled out a new and exciting program of awards that focus on **S**cience, **T**echnology, **E**ngineering, and **M**athematics. Through these awards, BSA hopes to spotlight its historical connection to these fields and bring a new set of fun activities to its youth programs.



The purpose of the BSA STEM Initiative is to provide opportunities for youth at all levels of Scouting to develop an enhanced interest in STEM fields and to earn recognition for STEM achievement. By bringing a Scouting focus to STEM activities, BSA hopes to increase the value of Scouting to families and communities as it supports the development of STEM knowledge and skills. Ultimately, the goal is to make it “cool” and rewarding to engage in STEM activities.

There are STEM awards available in each of the three traditional Scouting programs. These are optional awards. Within each program there are two tiers of awards.

Tier 1: The Nova Awards

In each program, there are 4 parallel Nova awards, one for each STEM area, all of which can be earned by any youth. These awards are designed to be fun and build on existing STEM-related elements of BSA’s traditional programs. They are recognized by a patch (for the first award earned) and a π pin (for each subsequent award earned).

Tier 2: The Supernova Awards

These awards are for highly dedicated youth. They involve challenging activities with significant independent effort. Each program has a different number of these awards available. For Boy Scouts and Venturers, the Supernova awards are structured in progressive levels. They are recognized by a medal on a neck ribbon.

Bear/Wolf Cub Scout

Dr. Luis W. Alvarez

Webelos Scout

Dr. Charles Townes

Boy Scout

Dr. Bernard Harris

Thomas Alva Edison

Venturer

Dr. Sally Ride

Wright Brothers

Dr. Albert Einstein

Turn these in!

General Characteristics of the Supernova Awards

Build on

- Existing badges (for CS and BS)
- Nova awards (for BS and V)

Involve

- Specific STEM activities
- Competitions or workshops (for BS and V)
- Research on STEM careers
- Interaction with STEM professionals
- Teaching of STEM ideas to others (for BS and V)
- Independent research
- Communication of ideas
- Possibility of failure and need to try again

General Characteristics of a Supernova Mentor

- Willing to facilitate and guide youth working towards Supernova awards
- Experienced in a STEM area (via education, career, hobby)
- Able to make a long commitment (months)
- Approved by district/council
- Not a Scout’s parent/leader (unless working with multiple youth)

How to Become a Supernova Mentor

Things to Think About

What level(s) would you like mentor?

- | | |
|---|-------------------------------------|
| <input type="checkbox"/> Cub Scouts | <input type="checkbox"/> Boy Scouts |
| <input type="checkbox"/> Webelos Scouts | <input type="checkbox"/> Venturers |

What are your geographic limitations?

- | | |
|-----------------------------------|------------------------------------|
| <input type="checkbox"/> District | <input type="checkbox"/> Town/City |
| <input type="checkbox"/> Council | <input type="checkbox"/> ZIP |

Qualifications Checklist

- Be at least 21 years old
- Be of good character
- Be able and willing to work with Scout age youth
- Be knowledgeable in some STEM field(s) by vocation, hobby, or education
- Provide current certification in Youth Protection Training
- Complete BSA adult registration form (no charge, position code 52)
- Submit Mentor Information Page to council
- Be approved by council
- Complete Supernova Mentor Training (highly recommended)

Elements of Guiding Youth in the Supernova

Sequence of Events in One Mentoring Assignment

1. First contact about a new mentoring assignment.
2. Schedule the first meeting with the Scout and a buddy.
3. Together, look at the requirements in the Nova Guidebook.
4. Did the youth complete any requirements *before* the first meeting? (STEM badge? STEM destination visit?) If so, assess and sign off.
5. Go over requirements left to complete.
6. Ensure the youth understands the requirements.
7. Decide on a schedule and plan for completing requirements.
8. Meet periodically (following YPP) to assess completion of requirements, reassess the plan, regroup, and/or retest as needed.
9. Certify that the youth has completed the award.
10. Submit a Supernova Award application to the council.
11. Buy and bestow the award.

Tips for Guiding Youth in STEM

- | | |
|----------------------|--|
| Basic Do's & Don't's | 1. Do insist on a buddy. |
| | 2. Do not modify the award requirements. |
| | 3. Do make sure each Scout understands the requirements. |
| | 4. Do ensure <i>each</i> Scout completes each requirement. |
| General Tips | 5. Do testing and reviewing in a friendly way. |
| | 6. Anticipate differences in backgrounds. |
| | 7. Establish a positive environment. |
| | 8. Emphasize listening over talking to your youth. |
| | 9. Emphasize options rather than commands. |
| | 10. Balance honesty with support. |
| Tips Unique to STEM | 11. Become a STEM resource specialist. |
| | 12. Emphasize active engagement over passive listening. |
| | 13. Help your youth interpret and grow from failure. |
| | 14. Keep sight of the underlying STEM principles. |
| | 15. Become a STEM myth buster. |

Safety and Risk Mitigation

- Start with BSA's Guide to Safe Scouting.
- Follow BSA's Youth Protection Policies.
- Ensure internet safety. (Use Cyberchip recognition.)
- Use safety gear and practices. (Get training, if needed!)
- Bring in a safety consultant, if necessary.
- Respect academic differences. (Offer activity options.)
- Don't be afraid to just say STOP!

Resources

National STEM website: www.scouting.org/stem
SVMB Council STEM website: www.svmbc.org/stem
STEM Resources (unofficial): www.bsastemresources.com

Project for the Dr. Albert Einstein Award

The Dr. Albert Einstein Supernova Award is the highest Supernova award offered in this program. It can only be earned by Venturers and culminates in the completion of a STEM research project, which is intended to be roughly comparable to an Eagle project in its scope. Even if you never plan to mentor Venturers in the Supernova award, it's valuable to have some understanding of this culminating experience so that your work with younger youth will set the stage for them to pursue this award if they wish.

*Einstein Award Project Requirements**

- Select a current STEM-related concern and develop a research project or experiment in that area.
- Should be challenging and require a significant investment of time and effort on your part (approximately 100 hours.)
- If your mentor is not a specialist in this area, he or she will seek a specialist to serve as a STEM consultant.
- Execute the project or experiment.
- Prepare a complete and well-documented written report AND an oral presentation.
- Present both to your mentor and your local council Nova committee.

Developing the Einstein Award Project

- Evaluate your youth's past STEM experiences.
- Assess resource and facility needs & availability.
- Assess and address safety concerns.
- Do you need a STEM consultant?
- Draft a plan: question, goal, method, logistics
- Is the challenge level on target?
- Revise the plan, as appropriate, and finalize.

Finding the Right Subject Matter Expertise

What if your youth wants to do a project that is outside your field or inside your field but outside your area of expertise?

Consider recruiting a STEM Consultant.

Your Role

- Remain the youth's Supernova mentor.
- Find a suitable, willing STEM Consultant.
- Prep the STEM Consultant on his/her role.
- Still ensure Youth Protection.
- Involve the STEM Consultant on finalizing the plan.

Targeting the Ideal Challenge Level

- Evaluate your youth's past STEM experiences.
- Consider a project with progressive modules.
- Strategize handling different kinds of difficulties.
- Involve your youth in addressing difficulties that arise.
- Remember, it's natural for a STEM project to morph over time in response to difficulties.

*In brief, see *Venturer Nova Awards Guidebook* for full text.