



National Capital Area Council
Guide for a Venturer or Sea Scout to Earn a STEM Supernova Award

BSA STEM Supernova Awards

BSA established the Supernova Awards program to go beyond the Nova Awards to further stimulate Venturing and Sea Scout interest in STEM-related fields, and show how science, technology, engineering and mathematics apply to everyday living and the world around them.

Assumptions

- A unit has an affiliated Supernova Mentor (registered with NCAC) who is current with Youth Protection Training.
- The District has an Advancement & Recognition Chair and a STEM Coordinator to provide assistance.

Guide Posts

- Venturing or Sea Scout youth are introduced to STEM through a series of activities and achievement.
- The Supernova Awards recognize superior achievement by accomplishing experiments and other activities.
- Follow Guide to Safe Scouting for all Activities.
- The Supernova Awards include:

Program	Supernova Awards
Venturing and Sea Scouts http://www.scouting.org/stem/Awards/Venturer_Supernova_Awards.aspx	Dr Sally Ride Supernova Award
	Wright Brothers Supernova Award
	Dr Albert Einstein Supernova Award

- The Dr Sally Ride Supernova Award requires (*see the BSA website noted above for complete requirements*):

Requirement	Activity	Transaction
1	Complete three of the Venturing and Sea Scout Nova Awards (any time after becoming a Venturer or Sea Scout)	<ul style="list-style-type: none"> • Launch, Wade!, What a Life = Science • Power Up = Technology • Hang On! = Engineering • Numbers Don't Lie = Math
2a	Complete the Venturing Scholarship exploration	Show you have an average grade of B or higher or improved your grades from the previous period
2b	Review and recommend an ethical way forward to prevent plagiarism, resolve conflicting facts and manage research paper resources	Do two of the three listed topics
2c	Obtain endorsement that you demonstrated satisfactory abilities or progress in independently completing scholarly endeavors and proactively seeking help when needed.	Provide the note to your Supernova Mentor
2d	Participate in, or report on, successful teamwork strategies	Discuss with your Supernova Mentor
2e	Either write on, or conduct, an ethical controversy discussion	Discuss with your Supernova Mentor
3	Complete Venturing and Sea Scout STEM explorations for four of the topics listed above	See the Venturing and Sea Scout STEM exploration requirements shown below
4	Complete two Supernova Activity Topics in two different STEM areas	See Supernova Activity Topic below. Report/present to Supernova Mentor.
5	Participate in an additional science fair competition or equally challenging STEM oriented competition	Approved by Supernova Mentor
6	Either 'shadow' for a day a local scientist/engineer or learn about a STEM career	Report/present to your Supernova Mentor
7	Present a Nova or other STEM related program at a Cub Scout den or pack meeting	Gain approval from the unit and arrange meeting time/place
8	Compare and analyze how the scientific method, based on facts and rules, can be used by other professions	Present to your Supernova Mentor
9	Submit an application for the Sally Ride Supernova Award	See process below (**)



- The Wright Brothers Supernova Award requires (see the BSA website noted above for complete requirements):

Requirement	Activity	Transaction
1	Earn either the Sally Ride Supernova Award or the Bernard Harris Supernova Award	Achieve the Wright Brothers Award – from being a Scout BSA, Venturer or Sea Scout
2	Complete one additional Venturing and Sea Scout Award (as a Venturer or Sea Scout) (list above)	Result is the Venturer has earned all four Scout BSA Nova Awards
3	Earn four additional Supernova Venturing STEM Explorations for a total of eight	Eight total earned
4	Complete two additional Supernova Activity Topics, one each in different STEM areas	See Supernova Activity Topic below. Report/present to Supernova Mentor. Total of four Supernova activities
5	Participate in an additional science fair competition or STEM oriented competition	Approved by Supernova Mentor Two science fairs or equivalent accomplished
6	Present an additional Nova or other STEM related program at a Cub Scout den or pack meeting	Gain approval from the unit and arrange meeting time/place; Two presentations accomplished
7	Research a STEM breakthrough or invention of the last 100 years and present a hypothesis on how this will affect society during your lifetime	Present either a 30 minute oral report or a 1,500 word written report to your Supernova Mentor
8	Submit an application for the Edison Supernova Award	See process below (**)

- The Dr Albert Einstein Supernova Award requires (see the BSA website noted above for complete requirements):
NOTE: If you are mentoring a Scout for the Einstein Award, notify the NCAC STEM Committee for guidance.

Requirement	Activity	Transaction
1	Earn either the Edison or the Wright Brothers Supernova Award as a Venturer or Sea Scout	See above and in the Scout BSA Supernova Procedures paper
2	Complete a written report on four additional Supernova Activity Topics, one each in different STEM areas	See Supernova Activity Topic below. Report/present to Supernova Mentor. Total of eight Supernova activities
3	Create and propose a new Nova awards topic for any program comparable to the existing Nova awards topics at that program level	Prepare a written outline for this proposed Nova awards topic and submit it to your mentor
4	Select an area of current STEM-related concern and develop a research project or experiment related to that area	Prepare a complete and well-documented written report AND an oral presentation. Present both to your mentor and your local council Nova committee.
8	Submit an application for the Edison Supernova Award	See process below (**)

Supernova Activity Topic Ideas

Science	New Things from Old
	Misconceptions, Misunderstandings and Mistakes
	Diet Coke and Mentos Explosion
Technology	Energy Technology
	Communications Technology
	Entertainment Technology
Engineering	Deconstruct & Analyze Mechanical Designs
	Build & Test High Performance Gliders
	Egg Drop Contest
Math	Modeling Bungee Jumping
	Predicting Old Faithful's Next Eruption
	Voting Methods and Fair Decisions



Venturing STEM Explorations

Action	Select a STEM Field of Interest	Archery Astronomy Athletics Aviation Rifle Shooting	Robotics Shotgun Shooting Space Exploration Weather
Safety Considerations	Understand the safety issues in this Field of Interest	Discuss with your Supernova Mentor	
Developing Knowledge	Visit a workplace or learn more about a field of interest	Discuss with your Supernova Mentor	
Hands-On Experiences	Identify and carry out four hands-on activities that are examples of work done in the field that you could carry out yourself	Consult with your Supernova Mentor	
Career Exploration	Find out about training, education and experience that are needed in a field of interest	Share with your Supernova Mentor	
Value & Impact	Research how important the selected field of interest is in addressing modern world problems and challenges	Create an oral or written report and present to your Supernova Mentor	

Success means

- The key to deliver a successful STEM Supernova program in a unit is to integrate STEM into the accomplishment of existing unit program activities.
- Success requires a concerted, focused effort by the Venturer or Sea Scout, with the assistance and guidance of a Supernova Mentor, the unit STEM coordinator, the unit merit badge coordinator and the unit leader.

Process to Achieve Supernova Award

- Identify the registered Supernova mentor – to help guide the Scout thru the award process. If the unit does not have an affiliated Supernova Mentor, contact the District STEM Coordinator or Advancement & Recognition Committee Chair. Register as a Supernova Mentor (position code 52, non-unit position, no registration fee, age 21 or over, subject matter expert in STEM) using BSA Adult application, complete Youth Protection and complete [Supernova Awards Mentor Information form](#) and turn into Council.) Training for Supernova Mentors is online at <https://my.scouting.org> (Click BSA Learn Center, then STEM in Scouting) or in person through the Council.
- Supernova Mentors may mentor their own offspring in a group setting if there are no alternates available.
- Determine if there are fellow Scouts who want to also earn the Supernova Award. Every Scout must have a buddy present at each meeting with a mentor. The buddy can be another Scout, a parent or guardian, a sibling, relative or friend. Youth Protection guidelines shall be followed at all times.
- Determine if there are any activities that can be accomplished as part of the unit's program
- Develop a plan and work with your Supernova Mentor to accomplish the Supernova Award requirements. The Mentor reviews all projects and progress and ensures that each Scout has actively and personally fulfilled *all* requirements. For example, a requirement uses words like "show", "demonstrate," "report," or "discuss" then every Scout must individually do so. It is unacceptable to present awards on the basis of Scouts sitting in classrooms and watching demonstrations or remaining silent during discussions.
- Supernova Activities may include a variety of report formats: oral report, written report, poster presentation, virtual poster, video production, multifaceted format, or any format of the Scout's own design, with mentor's



advance approval. The report must provide sufficient detail so that someone unfamiliar with the topic can understand its content.

- The Supernova application *package*** includes the [Supernova application](#) and copies of reports and appropriate documentation. The documentation may include a Gold Card and proof of Merit Badges or Nova awards. Worksheets, while not required, completed by the Scout can aid the process. The application has several signatures:
 - Unit Leader approves by signifying that the youth is registered with the unit and eligible for the award. It is helpful if the Unit Leader records which optional requirements were performed.
 - Candidate states that he/she has completed all requirements and worked with the Mentor.
 - Mentor approves, stating that he/she has reviewed application and recommends approval. The Mentor sends the application *package* on to District or Council STEM/Nova Committee below.
 - Council or District STEM/Nova Committee Chair approves by reviewing the application and determining that the applicant has met all requirements. If the District STEM/Nova Committee Chair approves, the application package is sent to Council.
 - Scout Executive approves the application and awarding of the Supernova award.
- NCAC will finalize the approved award and contact the unit leader for purchase of the medal. Then the medal and or bar and certificate will be sent to the unit leader.
- The Scout is recognized at the next unit court of honor or similar event.

Resources

- The NCAC STEM Committee Web page at <https://www.ncacbsa.org/activitiesevents/stem/> This page describes the NCAC STEM Program, how to register as a Supernova Mentor, training opportunities, and other events.
- The BSA STEM home page is at <http://www.scouting.org/stem.aspx> Here you can find more information on what the BSA STEM program is all about – and the background on how to successful achieve the Nova Awards.