

HANG ON!

A VENTURING ENGINEERING NOVA
AWARD





WHAT IS A NOVA AWARD?

- The Boy Scouts of America developed the STEM Nova Awards program to excite and expand a sense of wonder in our Scouts. By working with an adult counselor or mentor, the various modules allow them to explore the basic principles of STEM and discover how fun and fascinating STEM can be. The Supernova awards are offered for those who enjoy a super challenge. Discover how the STEM Nova Awards program helps youth be “Prepared. For Life.”

WHAT IS A SUPERNOVA AWARD

- The Venturing and Sea Scout Supernova awards recognize superior achievement by a Venturer or Sea Scout in the fields of science, technology, engineering, and mathematics (STEM). All experiments or projects should be conducted using the highest level of safety protocol and always under the supervision of a qualified, responsible adult.

WHAT KINDS OF TOPICS CAN I LEARN ABOUT?

- Animal Science
- Archaeology, Architecture
- Astronomy
- Automotive Maintenance
- Aviation
- Bird Study
- Chemistry
- Composite Materials
- Computers, Dentistry
- Drafting
- Electricity
- Electronics
- Energy
- Engineering
- Environmental Science
- Farm Mechanics
- Fish and Wildlife Management
- Forestry
- Gardening
- Geocaching
- Geology
- Insect Study
- Inventing
- Mammal Study
- Medicine
- Nature
- Nuclear Science
- Oceanography
- Plant Science
- Pulp and Paper
- Radio
- Reptile and Amphibian Study
- Robotics
- Scuba Diving
- Soil and Water Conservation
- Space Exploration
- Surveying
- Veterinary Medicine
- Weather
- Welding

Supernova Award Path

Venturing and
Sea Scouting



Dr. Sally Ride
Bronze medal

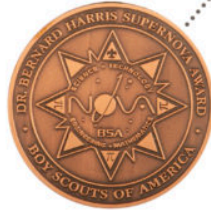


Wright Brothers
Silver medal



Dr. Albert Einstein
Gold medal
(Must be a registered Venturer or Sea Scout)

Scouts BSA



Dr. Bernard Harris
Bronze medal



Thomas Alva Edison
Silver medal

Cub Scouting



Dr. Luis Walter Alvarez
Wolf and Bear Scouts
Bronze medal



Dr. Charles H. Townes
Webelos Scouts
Bronze medal

HANG ON! AN ENGINEERING NOVA AWARD

- This Nova Award is designed to teach you how engineering works in your everyday life.
- Requirement worksheets are available online at usscouts.org and in the members section of the Crew website.

HANG ON! REQUIREMENTS



A VENTURING NOVA
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REQUIREMENT #1

- **Read or Watch three hours worth of documentaries or articles that involve motion or motion-inspired technology.**
- *Some examples include—but are not limited to—shows found on PBS ("NOVA"), Discovery Channel, Science Channel, National Geographic Channel, TED Talks (online videos), and the History Channel. You may choose to watch a live performance or movie at a planetarium or science museum instead of watching a media production. You may watch online productions with your counselor's approval and under your parent's supervision.*
- *Examples of magazines include—but are not limited to—Odyssey, Popular Mechanics, Popular Science, Science Illustrated, Discover, Air & Space, Popular Astronomy, Astronomy, Science News, Sky & Telescope, Natural History, Robot, Servo, Nuts and Volts, and Scientific American.*

REQUIREMENT #2

- **Choose ONE STEM field of interest from the following list. Complete ALL the requirements for a Venturing STEM exploration in that field.**
- Archery, Electronics, Railroading, Aviation, Engineering, Rifle Shooting, Composite Materials, Inventing, Robotics, Drafting, Model Design and Building, Shotgun Shooting
- *Composites can be found just about everywhere: in airplanes and sports cars, golf clubs and guitars, boats and baseball bats, bathtubs and circuit boards, and even bridges. Composites make bicycles and skis lighter, kayaks and fishing poles stronger, houses warmer, and helmets tougher." Choose one of these items for your discussion to answer requirement 3c.*

REQUIREMENT #3

- **Make a list or drawing of the six simple machines., Be able to tell your counselor the name of each machine and how each machine works., and Discuss the simple machines that were involved with the motion in your chosen STEM exploration, The energy source causing the motion for the subject of your STEM exploration, and What you learned about motion from doing the STEM exploration.**
- *"Six Simple Machines": ConstructionKnowledge.net Website:
http://www.constructionknowledge.net/general_technical_knowledge/general_tech_basic_six_simple_machines.php*

REQUIREMENT #4

- **Visit an amusement park or playground and discuss the simple machines found on the playground and the forces involved in the fixtures/rides.**

REQUIREMENT #5

- **On your own, design one of the following and include a drawing or sketch: an amusement park ride OR a playground fixture OR a method of transportation and explain the simple machines and forces involved in the fixture/ride/method of transportation.**

REQUIREMENT #6

- **Discuss with your counselor how engineering affects your everyday life.**

ANY
QUESTIONS?

