

Nova and Supernova STEM Awards 2018 Program of Activities for Boy Scouts, Venturers, and Sea Scouts



Mecklenburg County Council, with collaboration with Scout leaders from Palmetto Council, is pleased to announce a 2018 STEM (Science, Technology, Engineering, Mathematics) program for Boy Scouts, Venturers, and Sea Scouts. Participating Boy Scouts may earn any or all of 5 Nova Awards. Participating Venturers and Sea Scouts may earn any or all of 4 Nova awards.

<u>Field of Inquiry</u>	<u>Boy Scout Nova Awards</u>	<u>Venturer/Sea Scout Nova Awards</u>
S cience	Shoot!	Launch!
T echnology	Start Your Engines!	Power Up
E ngineering	Whoosh!	Hang On!
M athematics	Designed to Crunch	Numbers Don't Lie
A griculture	Let It Grow!	NA

For the first Nova Award earned, a Boy Scout or Venturer is awarded the distinctive Nova Award patch. Any additional Nova Awards are recognized by a pi (π) pin-on device attached to the patch.

<https://www.scouting.org/stem-nova-awards/awards/about-nova/>

http://www.scoutstuff.org/nsearch/?q=nova+patch&as_fid=j3Fx2sfUQbvFy4ppsEwo

Earning Boy Scout Nova and Supernova Awards

To earn any Nova Award, a Boy Scout must view videos or read for 3 hours on a STEM topic, complete one Nova Award merit badge, and complete STEM activities.

After a Boy Scout completes 3 Nova Awards, 4 Supernova merit badges, Scholarship Merit Badge, and Supernova STEM activities, he can earn the Dr. Bernard Harris Supernova Award.

After a Boy Scout completes the Dr. Bernard Harris Award, 4 more Supernova merit badges, and Supernova STEM activities, he can earn the Thomas Edison Supernova Award.

Earning Venturing Nova and Supernova Awards

After a Venturer or Sea Scout completes 3 Nova Awards, Scholarship Venturing Exploration, 4 Venturing STEM Explorations, 2 Supernova STEM activities, a STEM competition or workshop, and other requirements, he or she can earn the Dr. Sally Ride Supernova Award.

After a Venturer or Sea Scout completes the Dr. Sally Ride Supernova Award, 1 more Nova Award, 4 more Venturing STEM Explorations, 4 more Supernova STEM activities, a STEM competition or workshop, and other requirements, he or she can earn the Wright Brothers Supernova Award.

Earning the Dr. Albert Einstein Supernova Award

After a Boy Scout completes the Thomas Edison Supernova Award or a Venturer or a Sea Scout completes the Wright Brothers Supernova Award, 4 more Supernova STEM activities, and a significant research project, he or she can earn the Dr. Albert Einstein Supernova Award.

Our goals for 2018 are to:

1. have fun
2. visit interesting places
3. learn how STEM affects our everyday lives
4. learn about STEM careers
5. present opportunities for Scouts to earn prestigious STEM awards complementing their school work, extracurricular activities, and Scouting adventures

See <https://www.scouting.org/stem-nova-awards/Council/Unit-Guide/>

and

[https://filestore.scouting.org/filestore/stem/pdf/514-052\(17\)STEM_NovaActivies.pdf](https://filestore.scouting.org/filestore/stem/pdf/514-052(17)STEM_NovaActivies.pdf)

2018 Schedule

Parents are welcome to attend all events.

Boy Scouts and Venturers may participate in any or all of these activities.

Limited scholarship funding may be available.

On Saturday, March 17, we will hold our first event at Discovery Place Science in downtown Charlotte to focus on the Nova Whoosh! and Hang On! Awards for Engineering.

Pre-event homework includes viewing these online videos and/or reading:

Please watch this video on “work, energy, simple machines”

https://whut.pbslearningmedia.org/resource/bb0ebf8b-dc54-4333-90e0-c9985c12544b/physics-603-work/#.Wmv_p6inFPY

then write a list of the 6 simple machines.

After reading

<https://wtvi.pbslearningmedia.org/resource/wnet09.math.algebra.var.wnetlever/lifting-with-levers/#.Wm6BsqinFPY>

draw diagrams of 3 types (or classes) of levers and give examples of each.

Learn about math of levers at

<https://www.youtube.com/watch?v=YIYEi0PgG1g>

and make notes.

Watch

<https://www.youtube.com/watch?v=kBCsyGSS9DE>

by davenport1947

and make notes.

Watch

<https://www.youtube.com/watch?v=zZINi7hPaec>

by davenport1947

Introduction to Simple Machines Part I: Levers and Easy Lever Calculations-
Mechanical Advantage

and make notes.

Watch

<https://www.youtube.com/watch?v=S1JNpsDd0IA>

by davenport1947

Levers and Simple Machine Calculations - Using Ideal Mechanical Advantage
and make notes.

For fun, watch

<https://whut.pbslearningmedia.org/resource/phy03.sci.phys.energy.zplant/building-simple-machines-plant-quencher/#.WmwFwqinFPY>

What is a Rube Goldberg machine?

https://en.wikipedia.org/wiki/Rube_Goldberg_machine

Saturday, March 17, 2018

9:00 a.m. Arrive at Discovery Place Science, gather at the entrance at the corner of 6th and Church Streets

9:15 a.m. to 10:05 a.m. Simple Machines class

10:15 a.m. to 11:20 a.m. Leonardo da Vinci machines exhibit

11:30 a.m. to 12:15 p.m. Zapped electricity stage show

12:45 p.m. to 1:15 p.m. cafeteria for bring your own lunch

1:15 p.m. to 2:00 p.m. museum playground exhibit

2:00 p.m. Dream Big movie

3:00 p.m. Reflection (Stop, Start, Continue, or Thorns and Roses)

3:20 p.m. Dismiss

Cost is \$22 for each Scout and parent and Scout leader, including group rate of \$17 covering admission, movie, Simple Machines class, and taxes, \$4 for printing and overhead, and \$1 online transaction fee.

Maximum enrollment for this event is 50 Scouts.

For online registration and credit card payment for the Discovery Place Science event on Saturday, March 17, please see link at <http://www.mccscouting.org/advancement>

Plans for other activities:

April 29, 2018, 12:00 noon to 4:00 p.m., 2018 UNC Charlotte Science and Technology Expo, open to the public. Optional. No classes are planned, but this event is a good opportunity to discuss a lot of STEM topics with experts. See <https://ncsciencefestival.uncc.edu/>

June, date to be determined, to focus on Nova Designed to Crunch and Numbers Don't Lie Awards for Mathematics. Participants will learn how to keep box score, will review baseball statistics, with parental permissions read *Moneyball* book or view *Moneyball* movie, attend a Charlotte Knights game, and calculate horsepower by running up stairs.

July 23 to 25, camping trip to Charleston area to focus on Nova Let It Grow! Award for Agriculture and Nova Shoot! and Launch! Awards for Science. We will visit the Boeing North Charleston assembly plant, an aeroponics farm, Joint Base Charleston, a water treatment plant, and the Hunley submarine. Estimated cost is up to \$160 to include bus transportation, food, camping and exhibit entrance fees, depending on the number of Scouts and adults attending. Maximum group size is 26.

October, date to be determined, to focus on Nova Start Your Engines! and Power Up Awards for Technology. We will visit an industrial museum and a renewable energy facility.

For more information about the program, activities, or scholarships, send email to Dr. Stuart Tucker at stutucker@aol.com.