



Changes to the 2015 Cub Scout Nova Book

This supplement to the 2015 edition of the Cub Scout Nova Awards Guidebook updates the requirements those that became effective January 1, 2018. The current requirements for the four Nova Awards found in the guidebook and the two Supernova Awards can also be found at www.scouting.org/stem-nova-awards/.

Requirements for new Nova Awards published since 2015 can also be found at that web site.

Requirement 2 has changed for all four Cub Scout Nova Awards, as shown below.

THESE REQUIREMENTS REPLACE THOSE IN THE PRINTED 2015 GUIDEBOOK.

Science Everywhere!

2. Complete ONE adventure from the following list for your current rank or complete option A or B. (If you choose an Adventure, choose one you have not already earned.) Discuss with your counselor what kind of science, technology, engineering, and math was used in the adventure or option.

Wolf Cub Scouts

Collections and Hobbies
Digging in the Past
Germs Alive!
Grow Something

Bear Cub Scouts

A Bear Goes Fishing
Bear Picnic
Critter Care

Webelos Scouts

Earth Rocks!
Maestro!

Option A: Complete all of the following: (a) Explain the scientific method to your adult partner. (b) Use the scientific method in a simple science project. Explain the results to an adult. (c) Talk to a scientist about why he or she became a scientist.

Option B: Complete all of the following: (a) Show how to orient a map. Find three landmarks on the map. (b) Make a simple compass with a magnet and pin. (c) Show how a compass works. (d) Use a compass on an orienteering activity with at least 3 stops.

Wolf Cub Scouts

Collections and Hobbies: Collections are based on organizing items in common. "Analysis" of common elements is inherent in scientific method.

Digging in the Past: Paleontology and geology

Germs Alive!: Biology

Grow Something: Biology and living things

Bear Cub Scouts

A Bear Goes Fishing: Ecology and biology

Bear Picnic: Nutrition and biology

Critter Care: Understanding how to care for a critter helps a Scout learn about the biological needs of the pet.

Webelos Scouts

Earth Rocks!: Geology

Maestro!: Science and music connect through sound waves and materials chosen to create musical instruments. Additionally, music is closely connected to math.

Tech Talk

2. Complete ONE adventure from the following list for your current rank or complete option A or B. (If you choose an Adventure, choose one you have not already earned.) Discuss with your counselor what kind of science, technology, engineering, and math was used in the adventure or option.

Wolf Cub Scouts

Finding Your Way
Motor Away

Bear Cub Scouts

Make It Move
A World of Sound

Webelos Scouts

Build It
Fix It
Movie Making

Option A: Complete all of the following: (a) Explain these parts of a personal computer: central processing unit (CPU), monitor, keyboard, mouse, modem, and printer. (b) Make a list of ten devices that can be found in a home that use a computer chip to function. (c) Use a spreadsheet program to organize some information.

Option B: Complete all of the following: (a) Point out the major features of a camera to your den or family and explain the function of each part. Parts COULD include memory card, lens, shutter, power on and off, zoom, battery, flash, display panel, case, settings, etc. (b) Discuss with your leader or adult partner the benefits and contributions photography makes to modern life. (c) Use a camera to take at least 10 pictures of your family, pet, scenery; show these to your den.

Wolf Cub Scouts

Finding Your Way: Map and compass are technologies that have been used for centuries.
Motor Away: Using technology or applying science to improve wing or boat design

Bear Cub Scouts

Make It Move: Using technology to make items move
A World of Sound: Applied science (or using technology) to make musical instruments

Webelos Scouts

Build It: Using tools to create a specific project
Fix It: Using technology to improve or "fix" the surrounding world
Movie Making: Using a digital product to create a movie

Swing!

2. Complete ONE adventure from the following list for your current rank or complete option A or B. (If you choose an Adventure, choose one you have not already earned.) Discuss with your counselor what kind of science, technology, engineering, and math was used in the adventure or option.

Wolf Cub Scouts

Motor Away
Paws of Skill

Bear Cub Scouts

Baloo the Builder
A Bear Goes Fishing

Webelos Scouts

Adventures in Science
Engineer

Option A: With your parent's permission, take an old or broken household or mechanical item, break it down into its component pieces, and identify the purpose of five parts. Suggested items include a keyboard, floppy disk, telephone, VCR, tape deck, bicycle, people counter, printer or similar item. Make sure to use appropriate safety precautions.

Option B: Participate in two sports, either as an individual or part of a team, and identify the levers used in each sport.

Wolf Cub Scouts

Motor Away: Application of scientific principles to create a better boat or plane design
Paws of Skill: Levers are used in many sports, including baseball, golf, and tennis.

Bear Cub Scouts

Baloo the Builder: Using a lever (crowbars, pliers, screwdrivers, hammer, etc.)
A Bear Goes Fishing: Using a lever (a fishing rod)

Webelos Scouts

Adventures in Science: Rockets, motion on playground, and creating circuits are all part of engineering.
Engineer: Entire adventure deals with engineering.

1-2-3 Go!

2. Complete ONE adventure from the following list for your current rank or complete option A or B. (If you choose an Adventure, choose one you have not already earned.) Discuss with your counselor what kind of science, technology, engineering, and math was used in the adventure or option.

Wolf Cub Scouts

Code of the Wolf

Bear Cub Scouts

Robotics

Webelos Scouts

Game Design

Option A: Complete both of the following: (a) Conduct an opinion survey through which you collect data to answer a question and then show your results with a chart or graph. For example, what is the favorite food of the scouts in your den (chart how many like pizza, how many like cookies, etc.). (b). Conduct and keep a record of a coin toss probability experiment. Keep track of at least 25 tosses.

Option B: Complete both of the following: (a) Interview four adults in different occupations and see how they use measurement in their job. (b) Measure how tall someone is. Have them measure you. Complete in both inches and centimeters.

Wolf Cub Scouts	<i>Code of the Wolf: Working with numbers, logic, and math</i>
Bear Cub Scouts	<i>Robotics: Working with logic</i>
Webelos Scouts	<i>Game Design: Working with logic</i>

Supernova Award Requirement changes:

Dr. Luis W. Alvarez Supernova Award: Requirements 1 and 2 have changed:

1. Complete the adventure appropriate for your rank AND complete either option A or option B.

Wolf Cub Scouts: Code of the Wolf

Bear Cub Scouts: Make it Move

Option A: Do all of the following: (a) Keep track of the money you earn and spend for three weeks. (b) Geometry: Select a simple shape or figure. Observe the world around you for at least a week and keep a record of where you see this shape or figure and how it is used. (c) Visit a bank and have someone explain how interest works. Use the current interest rate and calculate how much interest different sums of money will earn.

Option B: Do all of the following: (a) Measure how you use your time by keeping a diary or log of what you do for a week. Then make a chart or graph to display how you spend your time. (b) Measure, mix, and prepare at least two recipes. Share your snacks with family, friends, or your den. (c) Study geometry in architecture by exploring your neighborhood or community. Look at different types of buildings-houses, places of worship, businesses, etc.-and create a presentation (a set of photographs, a collage of pictures from newspapers and magazines, a model) that you can share with your den or pack to show what you have seen and learned about shapes in architecture.

2. Complete the adventure appropriate for your rank or complete option A or B.

Wolf Cub Scouts: Call of the Wild

Bear Cub Scouts: Forensics

Option A: Do all of the following: (a) Go shopping with an adult and use a calculator to add up how much the items you buy will cost. See

whether your total equals the total at check out. (b) Explain the meaning of these statistical words and tools: data, averaging, tally marks, bar graph, line graph, pie chart, and percentage. (c) Study a newspaper or online news source, with your parent's or guardian's permission, to find as many examples as you can of statistical information.

Option B: Do both of the following: (a) Explain to your den or your Mentor how a meteorologist or insurance company (or someone else) might use the mathematics of probability to predict what might happen in the future (i.e., the chance that it might rain, or the chance that someone might be in a car accident). (b) Predict the probability of a plastic bottle landing on its bottom, top, and side. Then flip it 100 times and keep track of which way it lands. Identify any possible sources of experimental error. Discuss the differences if the bottle is empty or full.

**Dr. Charles H. Townes Supernova Award:
Requirements 1 and 2 have changed:**

1. Complete three of the following: Adventures in Science, Engineer, option A, or option B.

Option A: Do all of the following: (a) Construct one of the following from wood, and one from another material: Book rack, Shelf, Bulletin board, Tie rack, Letter holder, Notepad holder, Toolbox, Towel rack, Recipe holder, Lamp stand, Kitchen knife rack, Kitchen utensil rack, Napkin holder, Garden tool rack, Lid holder, Mailbox, Birdhouse, Desk nameplate, Letter, bill, and pencil holder, Bread box, Key rack, Measuring cup rack, Measuring spoon rack (b) Keep an "insect zoo" with insects that you have collected. You might have crickets, ants, or grasshoppers. Study them for a while then release them. Share your experience with your den or your Mentor. (c) With adult supervision, show how to check the oil level and tire pressure on a car.

Option B: Do all of the following: (a) Take a field trip to a geological site, geological laboratory, or rock show. Discuss what you learned at

an upcoming den meeting or with your mentor. (b) Construct a simple working electrical circuit using a flashlight battery, a switch, and a light. (c) Do five activities within your home or school that require the use of mathematics. Explain to your den or your Mentor how you use math every day.

2. Complete three of the following: Build It, First Responder, Into the Wild, Into the Woods, option A or option B.

Option A: Do two of the following: (a) Go on a geocaching adventure with your den or family. Show how you used a GPS unit or a smartphone with a GPS application to locate a geocache. (b) Describe both the benefits and the harm wildfires can cause in a forest ecosystem. Tell how you can prevent wildfire. (c) Set up an aquarium or terrarium. Keep it for at least a month.

Option B: Do both of the following: (a) With adult supervision, build and launch a model rocket. Describe how Newton's third law of motion explains how the rocket is propelled into the sky. (b) While on a campout or night hike, identify five constellations or satellites in the night sky.

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