Brookhaven National Laboratory
Patch Program Requirements
Daisy & Brownie

About Brookhaven National Laboratory
Brookhaven National Laboratory is a multipurpose research institution funded primarily by the U.S. Department of Energy’s Office of Science. Brookhaven Lab brings world-class facilities and expertise to the most exciting and important questions in basic and applied science—from the birth of our universe to the sustainable energy technology of tomorrow.

We operate cutting-edge, large-scale facilities for studies in physics, chemistry, biology, medicine, applied science, and a wide range of advanced technologies. The Lab’s almost 3,000 scientists, engineers, and support staff are joined each year by more than 4,000 visiting researchers from around the world. Our award-winning history stretches back to 1947, and we continue to unravel mysteries from the nanoscale to the cosmic scale, and everything in between.

What We Do
Opened in 1947 on the former site of the U.S. military’s Camp Upton, Brookhaven National Lab’s initial mission centered on the peaceful exploration of the atom. Particle accelerators, leading chemistry and biology experiments, and a host of visionary scientists soon joined groundbreaking research reactors, and Brookhaven began endless innovations and explorations. Our scientists have discovered subatomic particles and new forms of matter and pioneered the kinds of technology that fuel leading experimental programs all over the world. Our research has also led to life-saving medical imaging techniques that have revolutionized diagnosis and treatment of disease.

To earn the Brookhaven National Laboratory patch, please complete the requirements below:

LEARN
To observe something means to pay close attention. Observing is an important skill used by scientific thinkers. To learn more about how scientists observe and record details, complete both activities below.

1. Scientist Tool Kit: Scientists use tools to make observations and collect data. What tools do scientists use? Complete the Tools of Discovery insert chart with your troop. Choose three of the tools listed below. With the help of an adult, research what they are, how they are used, and how they help scientists with their observations. Next, using the Discovery at Your Doorstep booklet, find the hidden pictures on pages six and seven.

   a. Batteries  f. Book
   b. Safety Glasses  g. Computer
   c. Magnifying Glass  h. DNA
   d. Battery  i. Thermometer
   e. Beaker  j. Light bulb
   k. Molecule  l. Ruler
   m. Microscope
   n. Telescope
   o. Magnet

Now that you have learned about some of the tools that aid scientists in making observations, complete one of the activities below to practice making and recording observations of your own.
2. **Science Sense!** Your five senses—seeing, hearing, touching, smelling, and tasting—are powerful tools that will help you learn more about the world around you. Take a short hike with your troop. Using your senses and other tools such as thermometers, rulers, scales, or magnifying glasses, make observations about the surrounding area. Visit the same spot at least three times to record any changes. **Scientist Tip:** use the **Field Journal** to help guide you and make drawings in a notebook to help you remember what you observed.

**EXPLORE**

Now that you have sharpened your observation skills, let’s get exploring! Choose one of the activities below and record your experience in a journal. Remember to use as many of your five senses as possible!

1. **Visit Brookhaven National Lab In-person or Virtual.** Visit the world-class facilities at Brookhaven National Lab for some free family fun at Summer Sundays! Experience hands-on discovery, meet the scientists, enjoy science shows, and more! To learn more about Summer Sundays, visit [https://www.bnl.gov/sundays/](https://www.bnl.gov/sundays/). Looking for an option during the school year? Brookhaven hosts a variety of exciting field trips, too! To learn more (and share with your PTA!), visit [https://www.bnl.gov/education/static/slc/fieldtrip.asp](https://www.bnl.gov/education/static/slc/fieldtrip.asp).

2. **Try STEM with Girl Scouts!** Girl Scouts of Suffolk County offers a variety of STEM programs and school field trips at their Discovery World STEM Center in Yaphank on topics such as engineering, physics, chemistry, and more, all while earning badges and Journeys! To checkout GSSC’s programs, please visit [www.gssc.us/calendar](http://www.gssc.us/calendar).

3. **Field Trip Fun!** Long Island is filled with tons of great opportunities to explore! Visit a local science museum, aquarium or observatory. Record your experiences.

4. **The Excellence of Experiments!** Is a field trip not in your future? Using one of the following links, try an experiment or engineering challenge at home!
   - Magnets & Electricity: [https://www.exploratorium.edu/snacks/subject/electricity-and-magnetism](https://www.exploratorium.edu/snacks/subject/electricity-and-magnetism)
   - Static forces: [https://www.exploratorium.edu/snacks/remote-control-roller](https://www.exploratorium.edu/snacks/remote-control-roller)

**SHARE**

You have spent time learning, observing and exploring. What did you find? Share your newfound knowledge and journal with your family or your troop.
**Thirsty for more?** Check out these links to learn about Brookhaven National Lab’s history, awards, and more!

Watch the video! **This is Brookhaven Lab:** [https://youtu.be/csgXRPV0R3A](https://youtu.be/csgXRPV0R3A)

Directions: [https://www.bnl.gov/maps/](https://www.bnl.gov/maps/)

Brookhaven research has been honored by **seven Nobel Prizes**, National Medals of Science, Enrico Fermi Awards, Wolf Foundation Prizes, dozens of R&D 100 awards, and many other recognitions. Learn more about Brookhaven’s awards: [https://www.bnl.gov/about/awards/](https://www.bnl.gov/about/awards/)


For more information about Brookhaven’s programs for the community:
Office of Educational Programs (field trips, contests, research programs, internships):
Stakeholder Relations (Summer Sundays, PubSci, Science on Screen):
[https://www.bnl.gov/stakeholder/](https://www.bnl.gov/stakeholder/)