

Important information for parents about how to prepare your scout for any merit badge program at Ellanor C. Lawrence Park!



**Please bring your blue card (it should be signed by your scout master).**

**We do not have blue cards!**

Be sure that you are familiar with the requirements for the merit badge your scout has selected. Some badges can be very demanding and may take considerable time and planning to complete. Some badges are not appropriate for younger scouts.

Most Merit Badges are not designed to be completed in a single session with an instructor, so it is not always possible to walk away with a completed and signed blue card at the end of a program. Every badge requires some independent work by your scout. We call this "pre-work" because, if these requirements are performed *prior* to our program, we can complete and sign the merit badge card. Otherwise we will initial the specific requirements covered at the completion of our program and will have qualified counselors review the unmet requirements on an individual basis when your scout has completed them. Note you will have to contact and schedule an appointment with an appropriate staff member to do this. Not all staff members are qualified for all badges.

Please **prepare for the possibility that you may have to stay for the program and not just drop off your scout.** We encourage that one or more adults remain. There is no fee for adults and you are sure to learn something. This will allow the instructor to concentrate more fully on the difficult task of imparting all the required information and assisting the boys individually if necessary, while other adults keep the atmosphere calm and productive. It is also in keeping with the scouting guidelines for youth protection.

Be sure your scout is dressed appropriately for being outdoors for some or all of the program time.

Packing water and snacks is wise for long programs and programs scheduled in hot weather months.

Lastly, obtaining copies of the scout resource booklet for the merit badge can help prepare your scout working with his counselor and for completing any independent study. Books for the badges can be ordered at your local scouting store or at [www.scoutstuff.org](http://www.scoutstuff.org).

Thank you! And best wishes for success to your scout.

**Geology: This is one 4-hour class.**

**Pre-Work (or Post-Work):**

**Requirement 4B:** Pick a geology career that interests you and explain how to prepare for such a career. Discuss what courses might be useful for such a career. You may use resources found on the Internet (with your parent's permission), at the library, in books and articles from periodicals, from television programs, and at school.

**Keep reading for more details ....**

# GEOLOGY MERIT BADGE

**BE PREPARED:** The Geology Merit Badge program is four hours long, and depending on the weather, some of this time will be spent outside on the trails making observations. Dress for the weather, bring water, and a snack is also recommended.

We do not have blue cards at the site. Please bring yours. If you complete your prework you will be able to have the badge completed and your card signed at the end of the program.

We will be completing **requirements 1, 2, 3, 4B and 5A: Surface and Sedimentary Processes**, during the program. Our park has numerous streams and it's geologic history has been significantly shaped by sedimentary processes. Other sites within Fairfax County Park Authority complete option 5C: Mineral Resources. If this is where your interests lay, then you should register for one of those programs. If you are interested in completing 5B or 5D, you should consult with your scout master to find an appropriate counselor or check the FCPA scouting page to see if other parks have revised their programs. We have provided details on all the options for you to review below.

**PRE-WORK: *Before our program meets, please complete the following:***

**Requirement 4B:** please learn about the career opportunities available in geology. You may use resources found on the Internet (with your parent's permission), at the library, in books and articles from periodicals, from television programs, and at school (a list of resources may be found at the end of your worksheet). **On your worksheet, write down the career that interests you and explain how to prepare for such a career, including identifying at least two courses, other than introduction to geology, that might be useful for your career of interest.**

One way to identify courses is to look at a college catalog, eg, undergraduate courses at George Mason: [http://catalog.gmu.edu/content.php?catoid=17&navoid=1311&filter%5Bitem\\_type%5D=3&filter%5Bonly\\_active%5D=1&filter%5B3%5D=1#acalog\\_template\\_course\\_filter](http://catalog.gmu.edu/content.php?catoid=17&navoid=1311&filter%5Bitem_type%5D=3&filter%5Bonly_active%5D=1&filter%5B3%5D=1#acalog_template_course_filter).

Or take a look at the research areas at the graduate department at Virginia Tech: <http://www.geos.vt.edu/research/areas.php>. And then explore the what the courses in those area are about: [http://graduateschool.vt.edu/graduate\\_catalog/program.htm?programID=002d14431ce38e83011ce38e93e5001f](http://graduateschool.vt.edu/graduate_catalog/program.htm?programID=002d14431ce38e83011ce38e93e5001f)

# REQUIREMENTS for GEOLOGY MERIT BADGE



Geology is the study of Earth. It includes the study of materials that make up Earth, the processes that change it, and the history of how things happened, including human civilization, which depends on natural materials for existence.

## **Requirements**

1. Define geology. Discuss how geologists learn about rock formations. In geology, explain why the study of the present is important to understanding the past.
2. Pick three resources that can be extracted or mined from Earth for commercial use. Discuss with your counselor how each product is discovered and processed.
3. Review a geologic map of your area with your counselor and discuss the different rock types and estimated ages of rocks represented. Determine whether the rocks are horizontal, folded, or faulted, and explain how you arrived at your conclusion.
4. **Do ONE of the following:**
  - a. **Learn about the career opportunities available in geology. Pick one that interests you and explain how to prepare for such a career. Discuss what courses might be useful for such a career. You may use resources found on the Internet (with your parent's permission), at the library, in books and articles from periodicals, from television programs, and at school.**
5. Do ONE of the following (A or B or C or D):
  - A. **Surface and Sedimentary Processes Option**
    1. **Conduct an experiment approved by your counselor that demonstrates how sediments settle from suspension in water. Explain to your counselor what the exercise shows and why it is important.**
    2. **Using topographical maps provided by your counselor, plot the stream gradients (different elevations divided by distance) for four different stream types (straight, meandering, dendritic, trellis). Explain which ones flow fastest and why, and which ones will carry larger grains of sediment and why.**
    3. **On a stream diagram, show areas where you will find the following features: cut bank, fill bank, point bar, medial channel bars, lake delta. Describe the relative sediment grain size found in each feature.**
    4. **Conduct an experiment approved by your counselor that shows how some sedimentary material carried by water may be too small for you to see without a magnifier.**
    5. **Visit a nearby stream. Find clues that show the direction of water flow, even if the water is missing. Record your observations in a notebook, and sketch those clues you observe. Discuss your observations with your counselor.**