

Chemistry Merit Badge Pre-Work

- This merit badge will be presented in one four-hour session.
- Scouts may submit prework to their counselor by email ahead of the merit badge session. Counselors will not collect physical copies of prework during the class. Please note that we are unable to open Google Docs on Fairfax County Government computers. **Pework requirements may be sent as a .doc or .pdf attachment to Kari.Schilling@fairfaxcounty.gov one week prior to the class date. Pre-work requirements will be discussed/shared in class, please bring copies of all pre-work with you!**
- The blue card will be held at Hidden Oaks until proof of all requirements have been reviewed and signed off by a BSA scout counselor for these badges. Upon completion, the blue card will be mailed to the scout. Pre and post work should be emailed to Kari.Schilling@fairfaxcounty.gov

Please bring to class:

- Pre-Work
- Blue Card
- Pen or Pencil
- Snack/lunch and a drink. Please no red liquids.
- Appropriate clothing for being outside. Parts of the session may take place outdoors. Please wear sunscreen, insect repellent and appropriate clothing and footwear.

Pre-Work

The following should be completed by the scouts before the program and brought with them on the day of class.

Requirement 1a. and 1b. Obtain safety data sheets (SDS) for sucrose (sugar), isopropyl alcohol (rubbing alcohol), and a waterproofing spray. Compare their properties and potential hazard(s), including handling and disposal guidelines and toxicity information.

What types of personal protective equipment (PPE) are recommended for each and why? How does the recommended PPE change with toxicity and route of exposure?

Requirement 4a. After successfully completing requirement 1, design and conduct an experiment to compare at least two different types of waterproofing. Discuss with your counselor which one you would prefer to use on your tent and which one you would prefer to use on your boots, and why.

Requirement 6. Identify five fields of chemistry. Briefly describe each, tell how each applies to your life and how they interact. These could include any of the following:

Organic Chemistry, Inorganic Chemistry, Physical Chemistry, Analytic Chemistry, Biochemistry, Agricultural Chemistry, Atmospheric Chemistry, Computational Chemistry, Electrochemistry, Environmental Chemistry and Green Chemistry, and many others.

Requirement 6a. Name two government agencies that are responsible for tracking the use of chemicals for commercial or industrial use. Pick one agency and briefly describe its responsibilities.

Requirement 7. Identify three government agencies that oversee or provide guidance on the use of chemicals for personal, pharmaceutical, commercial, or industrial use, and discuss the agencies' history and responsibilities with your counselor.

Requirement 8c. Identify three career opportunities that would use skills and knowledge in chemistry. Pick one and research the training, education, certification requirements, experience, and expenses associated with entering the field. Research the prospects for employment, starting salary, advancement opportunities and career goals associated with this career. Discuss what you learned with your counselor and whether you might be interested in this career.

For help or questions, contact Kari Schilling at Kari.Schilling@fairfaxcounty.gov, or at (703) 941-1065.