

Merit Badge Requirements *Not* Covered at MOSI

MOSI will cover as many requirements as we can. The number depends on the pace of the group.

The following requirements will not be covered at MOSI. If you would like us to review the work for possible sign off, each scout should complete the requirements before the MOSI program and bring any work done with them. Also, please bring blue cards for each scout.

We do not cover everything for the Merit Badge. The following are pre-requirements that we do not cover. Please complete before coming to the workshop.

Astronomy:

- 4c. Make 2 sketches of the Big Dipper. In one sketch, show the Big Dippers orientation in the early evening sky. In another sketch, show its position several hours later. In both sketches, show the North Star and the horizon. Record the date and time each sketch was made.
6. At approximately weekly intervals, sketch the position of Venus, Mars or Jupiter in relation to the stars. Do this for at least four weeks and at the same time of night. On your sketch, record the date and time next to the planets position. Use your sketch to explain how planets move.
- 7b. Sketch the phase and daily position of the Moon, at the same hour and place, for a week. Include landmarks on the horizon such as hills, trees, and buildings. Explain the changes you observe.
9. Various choices (9a-e).

Chemistry:

1. Safety equipment and MSDS
- 2b. Describe how to separate: sand from water, table salt from water, oil from water, gasoline from motor oil. Name practical processes that require these kinds of separations.
5. List the 4 classical divisions of chemistry. Briefly describe each one, and tell how it applies to your everyday life.
- 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 to the public and the environment.
7. We are not able to cover any of the activities for #7



MOSI Scout Programs

Environmental Science:

(This is done in two separate classes. We will start some experiments during the first class and finish with them during the 2nd class).

Prerequisites for ES Class I:

1. Make a timeline of the history of environmental science in America: 1500, 1600, 1700, 1800, 1900, 2000.
Identify the contribution made by the Boy Scouts of America to environmental science. Include dates, names of people or organizations, and important events.
2. Define the various terms.
- 3B(2) Record trips taken, mileage, and fuel consumption of a family car for seven days, and calculate how many miles per gallon the car gets. Determine whether any trips could have been combined (“chained”) rather than taken out and back. Using the idea of trip chaining, determine how many miles and gallons of gas could have been saved in those seven days.

Homework from Class I/Prerequisites for ES Class II:

- 3A(2) Keep a journal of your data and observations for your greenhouse effect experiment. Be ready to discuss your conclusions during Class II.
- 3C(3) Write a 100-word report on how the waterborne pollutant affected aquatic life, what the effect was, and whether the effect is linked to biomagnification.
- 3D(1) Take photographs or make drawings of the soil erosion experiment after your experiment and make a poster showing your results. Present the poster to your patrol or troop.
- 3E(1) Prepare a 100-word report & drawing about the endangered organism found in your state. Present your report to your patrol or troop.
- 3F(2) Practice at least two methods to conserve resources or use resources more efficiently in your home, school or camp for seven days and be prepared to discuss what you have learned in class II.
6. Research the environmental career of your choice.

Nature Study:

- 4(a)(2) Make and set out a birdhouse, feeder, or bath and list what birds used it during one month.
- 4(d)(1) Collect, euthanize, and bring in 10 species of insects or spiders for mounting
- 4(f)(2) Collect six shells

Soil and Water Conservation:

- 1A-C Tell what soil is, how it’s formed. Describe 3 kinds of soil & how they’re different. Describe the 3 main plant nutrients in fertile soil and how they can be put back in the soil when used up.
- 2A-D Define soil erosion, tell why it’s important, and how it affects you. Name and describe 3 kinds of soil erosion. Take pictures or draw 2 kinds of soil erosion.
- 6A-B Tell what water pollution is. Describe the common sources of water pollution and explain the effects.

Space Exploration:

1. Tell the purpose of space exploration and include historical reasons, immediate goals in terms of specific knowledge, benefits related to Earth resources and technology and new products.
2. Design a collector’s card, with a picture on the front and information on the back about your favorite space pioneer. Bring and be prepared to present to the group.
8. Research two possible careers in space exploration. Find out the qualifications, education, preparation, and major responsibilities required for each career.