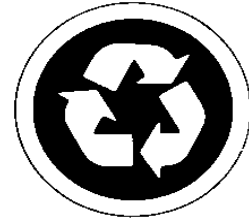


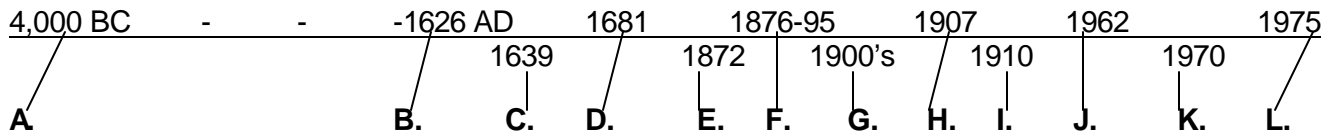
Name _____ Troop # _____ Class Period _____

ENVIRONMENTAL SCIENCE MERIT BADGE WORKBOOK



1. Timeline of the history of environmental science in America:

Select letter below dates and write it in the blank of the historical events listed below:



___ *Silent Spring*, a book written by Rachel Carson, was published discussing the dangers of DDT to the environment.

___ America's first National Park was established. It was Yellowstone National Park.

___ Artist George Catlin and naturalist Henry David Thoreau were writing about the need to preserve some of the unique environments of North America.

___ America's first "Earth Day" was on April 22 of this year.

___ A law was passed to control the cutting and sale of timber.

___ Two Americans founded separate organizations for boys that focused on nature and the environment.

___ People dedicated to environmental protection and wildlife conservation founded groups such as the Appalachian Mountain Club, the New York Audubon Society, the Sierra Club, and the American Scenic and Historic Preservation Society

___ People in Newport, Rhode Island agreed to restrict deer hunting to six months a year.

___ On February 10, Ernest Thomas Seton and Daniel Carter Beard merged their separate boy's clubs into the Boy Scouts of America. This new organization was founded by William D. Boyce.

___ In Pennsylvania, William Penn decreed that one acre must be left forested for every five acres of forest that were cleared.

___ The original American environmental scientist, the Native Americans first saw people as a part of nature.

___ A scientific study by M. C. Marsh showed how industrial wastes released into water sources hurt fish.

- What do the Boy Scouts contribute to environmental science?

2. Define each of the following words including how they are related:

- a. population
- b. community
- c. ecosystem
- d. biosphere
- e. symbiosis
- f. niche
- g. habitat
- h. conservation
- i. threatened species
- j. endangered species
- k. extinction

3. Activities. Our class will do the following selected activities. Use the back of this page to record observations.

a.(1) page 17. Day 2.

b.(2) page 45. (Scoutmaster Lounge, Grand Lake Dining Hall) On Day 1, there was no significant difference in the plants. Visit the plants every day and record any changes in the plants. Make a drawing of each plant at the beginning and later to document any damage caused by the acid. Be prepared to discuss your observations on the last day of class.

c.(2) page 55. Day 4.

d.(2) page 64 (Scoutmaster Lounge, Grand Lake Dining Hall). Count the leaves on each plant; record their heights, and any other distinguishing information. Record the same information again for each of the next 3 days. Be prepared to discuss your observations on the last day of class.

e.(2) page 81. Following the viewing of the video, write a 100-word report and discuss it with one of your counselors.

f.(1) page 62. Day 3.

4. The ecosystem in a bottle is on display in the Scoutmaster Lounge at the Grand Lake Dining Hall. The class will discuss it daily. Observe how it changes on a daily basis. Make notes on the back of this paper.

5.(a) See pages 31-33. The Counselors have already marked the three plots near Seton. You should use your open time period to visit the plots daily, jot down observations (on the back of this paper), and turn in a report to the Counselors on the last day of class.

6. Pages 84-86. The site is an area of woodland across the gravel road from Seton. The imaginary construction project is to be chosen by each Scout. The one page environmental impact assessment should include the following:

1. Plant and animal life at the site.
2. Type of ecosystem.
3. Whether the area has been disturbed before.
4. Whether the site includes habitat for an endangered or threatened species.
5. The presence of streams, ponds, swamps, or other wetlands on the site.
6. If the site has important fossils or artifacts.
7. Activities on lands next to the site.

Describe how the proposed project fits into existing plans for the area. Suggest ways the proposed project will likely affect the environment. Identify any effects of the project that probably will be harmful but cannot be avoided. Suggest alternatives to the proposed project that would protect the environment, yet still meet the needs of people. Discuss trade-off between the short and long term environmental losses and the short and long term benefits of the proposed project. Determine how the proposed project would permanently prevent other uses of the site. After completing the environmental assessment, include whether you would go ahead or stop your project and why. Notebook paper is available from the Counselors.

7. Pages 88-91. After the class has discussed this requirement, make a *purpose statement* and write it below. Design a project and list the tasks, which would have to be done. Mark the tasks, which could be done by your Troop with a star. Decide how you would assign these tasks. You may use the back of this page if more space is needed. Prepare a poster and present it to your Troop while at Winter Camp. Get your Scoutmaster to sign it and show the signature to your Counselors.

8. Class discussion.