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Environmental Science Merit Badge

An online virtual Scouting experience provided by the Narragansett Council - Boy Scouts of America

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The Environmental Science Merit Badge takes concepts of nature and ecology to the next level. Through discussions, experiments, and research, Scouts learn how their decisions and daily lives impact the environment and natural world around them. Environmental stewardship and consciousness are necessities that all youth should learn about in order to be productive members of society. Environmental science or sustainability merit badge are interchangeable for Eagle Scout rank requirements.

What to expect in “envi-sci” merit badge?

Environmental Science Merit Badge has been broken down into two hour and a half virtual merit badge sessions with a set requirements to be completed between the meetings. There are no required supplies for the virtual sessions but Scouts should be prepared to think and share ideas with the others in the class. Environmental Science takes thinking out of the box to think of ways to address environmental impacts and issues that are ongoing in our society. Scouts will learn all about ecology and how things can be affected positively or negatively in the natural world around us.

More Virtual Merit Badges Available Here!

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Virtual Merit Badge Session 1

Duration: 90 minutes

1. Introduction & Welcome
2. Explanation of environmental science vs ecology
3. Make a timeline of the history of environmental science in America. Identify the contribution made by the Boy Scouts of America to environmental science.
4. Overview of the 7 Leave No Trace principles.
5. Define the following terms: population, community, ecosystem, biosphere, symbiosis, niche, habitat, conservation, threatened species, endangered species, extinction, pollution prevention, brownfield, ozone, watershed, airshed, nonpoint source, hybrid vehicle, fuel cell.
6. Discuss what is an ecosystem. Tell how it is maintained in nature and how it survives
7. Explain what acid rain is. In your explanation, tell how it affects plants and the environment and the steps society can take to help reduce its effects.
8. Determine 10 ways to conserve resources or use resources more efficiently in your home, at school, or at camp. Practice at least two of these methods for seven days and discuss with your counselor what you have learned.
9. Conduct an experiment to illustrate soil erosion by water.
10. Out of class assignment explanation
11. Conclusion & Dismissal

After the completion of Virtual Session #1, Scouts should begin work on the out of class assignment that should be completed prior to Virtual Session #2.

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Virtual Merit Badge Session 2

Duration: 90 minutes

1. Introduction & Welcome
2. Share endangered species essays.
3. Using photographs or illustrations, point out the differences between a drone and a worker bee. Discuss the stages of bee development. Explain the pollination process, and what propolis is and how it is used by honey bees. Tell how bees make honey and beeswax, and how both are harvested. Explain the part played in the life of the hive by the queen, the drones, and the workers.
4. Using a construction project identify the items that would need to be included in an environmental impact statement/study for the project.
5. Discussion: career opportunities in environmental science. Describe the education, training, and experience required for each profession. Explain why this profession might interest you.
6. Conduct an experiment to identify the methods that could be used to mediate (reduce) the effects of an oil spill on waterfowl.
7. Share observations, findings, similarities, and differences found in the out of class observation assignment.
8. Conclusion & Dismissal

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Out of Class Requirements

Complete the following requirements between virtual sessions one and two. Be prepared to share information, findings, and conclusions with the class.

3 Days of Observations:

1. Choose two outdoor study areas that are very different from one another (e.g., hilltop vs. bottom of a hill; field vs. forest; swamp vs. dry land).
2. Make at least three visits to each of the two study areas (for a total of six visits), staying for at least 20 minutes each time, to observe the living and nonliving parts of the ecosystem. Space each visit far enough apart that there are readily apparent differences in the observations. Keep a journal that includes the differences you observe. Draw conclusions that explain similarities and differences then share your observations with your class.

Endangered Species Essay:

Do research on one endangered species found in your state.

Compile the following information into a 100-word report:

1. Find out what its natural habitat is
2. Why it is endangered
3. What is being done to preserve it
4. How many individual organisms are left in the wild
5. Including a drawing.

Share your report with your class.

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3 Days of Observations Tracking Chart

	Location 1:		Location 2:	
Day 1:	Living:	Non-living:	Living:	Non-living:
Day 2:	Living:	Non-living:	Living:	Non-living:
Day 3:	Living:	Non-living:	Living:	Non-living: