



Virtual Scouts BSA Workshop Requirements



1. Bird Study

 COMPLETED DURING WORKSHOP

 COMPLETED AT HOME

REQUIREMENT NUMBER	REQUIREMENT DESCRIPTION
1	Explain the need for bird study and why birds are useful indicators of the quality of the environment. Describe how birds are part of the ecosystem.
2	Show that you are familiar with the terms used to describe birds by doing the following: a. Sketch or trace a perched bird and then labeling 15 different parts of the bird. b. Sketch or trace an extended wing and label six types of wing feathers.
3	Demonstrate that you know how to properly use and care for binoculars. a. Explain what the specification numbers on the binoculars mean. b. Show how to adjust the eyepiece and how to focus for proper viewing. c. Show how to properly care for and clean the lenses. d. Describe when and where each type of viewing device would be most effective.
4	Demonstrate that you know how to use a bird field guide. Show your counselor that you are able to understand a range map by locating in the book and pointing out the wintering range, the breeding range, and/or the year-round range of one species of each of the following types of birds: a. Seabird b. Plover c. Falcon or hawk d. Warbler or vireo e. Heron or egret f. Sparrow
5	Observe and be able to identify at least 20 species of wild birds. Prepare a field notebook, making a separate entry for each species, and record the following information from your field observations and other references. a. Note the date and time. b. Note the location and habitat. c. Describe the bird's main feeding habitat and list two types of food that the bird is likely to eat. d. Note whether the bird is a migrant or a summer, winter, or year-round resident of your area.



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6	Describe to your counselor how certain orders of birds are uniquely adapted to a specific habitat. In your description, include characteristics such as the size and shape of the following: <ol style="list-style-type: none"> Beak Body Leg and foot Feathers/plumage
7	Explain the function of a bird's song. Be able to identify five of the 20 species in your field notebook by song or call alone. Explain the difference between songs and calls. For each of these five species, enter a description of the song or call, and note the behavior of the bird making the sound. Note why you think the bird was making the call or song that you heard.
8	Do ONE of the following: <ol style="list-style-type: none"> Go on a field trip with a local club or with others who are knowledgeable about birds in your area <ol style="list-style-type: none"> Keep a list or fill out a checklist of all the birds your group observed during the field trip. Tell your counselor which birds your group saw and why some species were common and some were present in small numbers. Tell your counselor what makes the area you visited good for finding birds. By using a public library, the internet, or contacting the National Audubon Society, find the name and location of the Christmas Bird Count nearest your home and obtain the results of a recent count. <ol style="list-style-type: none"> Explain what kinds of information are collected during the annual event. Tell your counselor which species are most common, and explain why these birds are abundant. Tell your counselor which species are uncommon, and explain why these were present in small numbers. If the number of birds of these species is decreasing, explain why, and what, if anything, could be done to reverse their decline. Participate in a bird banding program with an approved federal or state agency, university researcher, bird observatory, or certified private individual. <ol style="list-style-type: none"> Explain who is able to band birds and why. Explain why birds get banded. Explain what kinds of birds get banded. Tell how the birds were captured, the number of bird species recorded during our visit, and your role in the program.
9	Do ONE of the following. For the option you choose, describe what birds you hope to attract, and why. <ol style="list-style-type: none"> Build a bird feeder and put it in an appropriate place in your yard or another location. Build a birdbath and put it in an appropriate place. Build a backyard sanctuary for birds by planting trees and shrubs for food and cover. Build a nest box for a species of your choice using plans approved by your counselor.



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10	Do the following: a. Explain the difference between extinct, endangered, and threatened. b. Identify a bird species that is on the endangered or threatened list. Explain what caused their decline. Discuss with your counselor what can be done to reverse this trend and what can be done to help remove the species from the endangered or threatened list.
11	Identify a nonnative bird (introduced to North American from a foreign country since 1800). Describe how nonnative birds may become damaging to the ecosystem.
12 <i>(please complete research before workshop)</i>	Identify three career opportunities connected to the study of birds. Pick one and find out the education, training, and experience required for this profession. Discuss with your counselor if this profession might interest you.



Virtual Scouts BSA Workshop Requirements



2. Environmental Science

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1	Make a timeline of the history of environmental science in America. Identify the contribution made by the Boy Scouts of America to environmental science. Include dates, names of people or organization, and important events.
2	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, hybridvehicle, fuel cell.
3A3	Discuss what is an ecosystem. Tell how it is maintained in nature and how it survives.
3B3	Explain what is acid rain. In your explanation, tell how it affects plants and the environment and the steps society can take to reduce its effects.
3C2	Conduct an experiment to identify the methods that could be used to mediate (reduce) the effects of an oil spill on waterfowl. Discuss your results with your counselor.
3D2	Perform an experiment to determine the effect of an oil spill on land. Discuss your conclusions with your counselor.
3E	<p>Endangered Species</p> <p>(1) Do research on one endangered species found in your state. Find out what its natural habitat is, why it is endangered, what is being done to preserve it, and how many individual organisms are left in the wild. Prepare a 100-word report about the organism, including a drawing. Present your report to your patrol or troop.</p> <p>(2) Do research on one species that was endangered or threatened but that has now recovered. Find out how the organism recovered, and what its new status is. Write a 100-word report on the species and discuss it with your counselor.</p> <p>(3) With your parent's and counselor's approval, work with a natural resource professional to identify two projects that have been approved to improve the habitat for a threatened or endangered species in your area. Visit the site of one of these projects and report on what you saw.</p>
3F	<p>Pollution Prevention, Resource Recovery, and Conservation</p> <p>(1) Look around your home and determine 10 ways your family can help reduce pollution. Practice at least two of these methods for seven days and discuss with your counselor what you have learned.</p> <p>(2) 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.</p> <p>(3) Perform an experiment on packaging materials to find out which ones are biodegradable. Discuss your conclusion with your counselor.</p>



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3G1	Using photographs or illustrations, point out the differences between a drone and a worker bee. Discuss the stages of bee development (eggs, larvae, pupae). 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.
3H	<p>Invasive Species</p> <p>(1) Learn to identify the major invasive plant species in your community or camp and explain to your counselor what can be done to either eradicate or control their spread.</p> <p>(2) Do research on two invasive plant or animal species in your community or camp. Find out where the species originated, how they were transported to the United States, their life history, how they are spread, and the recommended means to eradicate or control their spread. Report your research orally or in writing to your counselor.</p> <p>(3) Take part in a project of at least one hour to eradicate or control the spread of an invasive plant species in your community or camp.</p>
4	<p>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). For BOTH study areas, do ONE of the following:</p> <p>(a) Mark off a plot of 4 square yards in each study area, and count the number of species found there. Estimate how much space is occupied by each plant species and the type and number of nonplant species you find. Report to your counselor orally or in writing the biodiversity and population density of these study areas.</p> <p>(b) 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. Discuss your observations with your counselor.</p>
5	Using the construction project provided or a plan you create on your own, identify the items that would need to be included in an environmental impact statement for the project planned.
6 <i>(please complete research before workshop)</i>	Find out about three career opportunities in environmental science. Pick one and find out the education, training, and experience required for this profession. Discuss this with your counselor, and explain why this profession might interest you.