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# SCOUTS ENVIRONMENTAL SCIENCE CLASS

NAME: \_\_\_\_\_ TROOP# \_\_\_\_\_

DATE: \_\_\_\_\_



## REQUIREMENT #2: Define the following terms: Match Definitions to Words.

1. \_\_\_\_\_. The part of the Earth that contains and supports living things.
2. \_\_\_\_\_. Groups of populations that interact with one another in a given area.
3. Living community and nonliving factors that affect it from relationships that together make up an \_\_\_\_\_.
4. All the individual red bellied turtles living in the river make up a \_\_\_\_\_ of red bellied turtles.
5. A \_\_\_\_\_ is the role of a species in its community.
6. The place where an organism lives is its \_\_\_\_\_.
7. Organisms that live together but do not feed upon each other are called \_\_\_\_\_.
8. \_\_\_\_\_ is a form of oxygen; it is important in preventing harmful ultraviolet radiation from reaching Earth's surface.
9. An \_\_\_\_\_ is an area that, due to geography, weather patterns and climate, shares the same air.
10. A \_\_\_\_\_ uses a gas engine and an electric motor.
11. Vehicles powered by a \_\_\_\_\_ operate on electricity produced through a chemical reaction.
12. You can practice \_\_\_\_\_ by walking, biking or carpooling.
13. A \_\_\_\_\_ is the region draining into a river, river system, or other body of water.
14. Pollutants such as fertilizers and pesticides that enter our water system from runoff are called \_\_\_\_\_ because the sources cannot be traced to a single identifiable point.
15. An abandoned piece of commercial or industrial land that is contaminated or suspected of being contaminated by a hazardous substance is known as a \_\_\_\_\_.
16. \_\_\_\_\_ is the death of all the individuals of a given species, and the species has disappeared from Earth.
17. A species that has so few individuals left that it is in danger of extinction is called an \_\_\_\_\_.
18. \_\_\_\_\_ are species that are losing members at such a rate that they will become endangered if nothing is done to change the situation.
19. To reduce, reuse and recycle is the \_\_\_\_\_ of resources.

population  
brownfield  
ozone  
ecosystem  
symbiosis  
endangered species  
fuel cell

conservation  
hybrid vehicle  
community  
extinction  
habitat  
airshed

niche  
pollution prevention  
watershed  
biosphere  
threatened species  
nonpoint source

**REQUIREMENT #3: Do ONE activity from EACH of the following categories (using the activities in the pamphlet as the basis for planning and projects):**

**a. ECOLOGY**

2. Conduct an experiment illustrating the greenhouse effect. Keep a journal of your data and observations. Discuss your conclusions with your counselor.

Start            3 Minutes            6 Minutes            9 Minutes            12 Minutes            15 Minutes

<b>A</b>						
<b>B</b>						

**OBSERVATIONS:**

1. Did the temperature in each bottle change during your experiment?

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2. Explain what the light bulb and the plastic wrap represent in this model of the greenhouse effect.

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**CONCLUSIONS:**

Compare your experimental setup to real conditions on Earth. Using your data, explain why the greenhouse effect makes it possible for life to exist on Earth.

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**b. AIR POLLUTION:**

3. Explain what is acid rain. In your explanation, tell how it affects plants and the environment and the steps society can take to help reduce its effects.

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**c. WATER POLLUTION.**

2. 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.

**OBSERVATIONS:**

1. What happened to the oil and the water when you used a straw to blow the oil away? What conditions at sea might this represent that would make cleaning an oil spill more difficult?

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2. How well did the string work to contain the oil in pan B?

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**d. LAND POLLUTION:**

1. Photograph an area affected by erosion. Share your photographs with your counselor and discuss why the area has eroded and what might be done to help alleviate the erosion.

**This is a Pre-requisite**

Must be done before you come to class or your blue card **cannot** be signed off.

**e. ENDANGERED SPECIES - DO ONLY ONE**

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. (Use at least **4 DIFFERENT** reference sources.)  
Page 88 of Scout booklet.

**OR**

2. Do research on one species that was endangered or threatened but which 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.

**THIS IS A PREREQUISITE!** It will be attached to your booklet.

Remember to neatly write or type the report in your own words. **Down loading an article from the Internet is not your work.**

Endangered organisms can be any bird, mammal, reptile, fish, insect, sea creature, tree or plant from **CALIFORNIA** or its coast.

**f. POLLUTION PREVENTION, RESOURCE RECOVERY, AND CONSERVATION.**

- 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.**
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.
3. Perform an experiment on packaging materials to find out which ones are biodegradable. Discuss your conclusion with your counselor.

**THIS IS A PREREQUISITE.** It will be attached to your booklet.

**REQUIREMENT #4: 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:**

- 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 non plant species you find. Write a report that adequately discusses the bio-diversity and population density of these study areas. Discuss your report with your counselor.

**Plot 1:**

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**Plot 2:**

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## ENVIRONMENTAL IMPACT ASSESSMENT

**REQUIREMENT #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.

### STEP 1:

Type of Construction: \_\_\_\_\_

Size of Construction: \_\_\_\_\_

Benefit to Community: \_\_\_\_\_

### STEP 2:

a. What types of plant and animal life are at the site?

\_\_\_\_\_

b. What type of ecosystem?

\_\_\_\_\_

c. Has it been disturbed before?

\_\_\_\_\_

d. Is it a habitat for an endangered or threatened species?

\_\_\_\_\_

e. Does it slope? Would the soil be in danger of erosion during construction?

\_\_\_\_\_

f. Are there streams or wetlands such as swamps at the site?

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g. Is there reason to believe important fossils or artifacts are at the site?

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**STEP 3:**

Describe how the proposed project fits into existing plans for the area.

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**STEP 4:**

Suggest ways the proposed project will likely affect the environment. Answer the following questions:

a. Will the project cause soil erosion?

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b. Will it disturb forests, grasslands, deserts, or other ecosystems?

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c. Will it disturb any habitats of endangered or threatened species?

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**STEP 5:**

Identify any effects of the project that probably will be harmful but cannot be avoided. A bridge over a river to connect two existing roads, for example, probably cannot be built elsewhere, so the project's negative effects may have to be accepted.

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**STEP 6:**

Suggest alternatives to the proposed project that would protect the environment, yet still meet the needs of people. Alternatives may include different project designs at the same site or the same project built at a different site.

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**STEP 7:**

Discuss the trade-offs between the short- and long-term environmental losses and the short- and long-term benefits of the proposed project.

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**STEP 8:**

Determine how the proposed project would permanently prevent other uses of the site. If a vacant lot is paved, for example, then that land could not be used for a community garden.

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**REQUIREMENT #6:** 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.

CAREER 1: \_\_\_\_\_

CAREER 2: \_\_\_\_\_

CAREER 3: \_\_\_\_\_

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## ENVIRONMENTAL SCIENCE TIMELINE

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EVENT

1626

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1639

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1681

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1830's

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1872

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1875

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1876

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1886

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1887

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1891

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1892

1895

1900's

1902

1904

1905

1907

1910

1916

1922

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1960

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1962

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1970

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