



Pathfinder's Name

Ecology

- 1. Construct a diagram of a fresh-water pond ecosystem with pasted-on animal cutouts.
- 2. Pick one mammal, bird, reptile, and amphibian from your home environment, and for each construct a diagram of its ecological pyramid.

Mammal _____ Bird _____

Reptile _____ Amphibian _____

- 3. Know the meaning of the following terms:

Ecology _____

Community _____

Food chain _____

Commensalism _____

Ecological succession _____

Plankton _____

Conservation _____

Climax community _____

Eutrophication _____

Biome _____

4. Make detailed field observations and a careful library book study of the habitat of some small animal in your own environment. Write a report of about 700 words, one-half from your field observations and one-half from your book study.

5. Define an ecosystem and state what the basic biological and physical factors are that keep it a balanced system.

Ecosystem _____

Biological factors _____

Physical factors _____

6. Investigate the disposal of trash in your community. How much is disposed per family per day?

per week? _____

per year? _____

How better can it be taken care of?

7. Check the daily paper for one month for the nearest large city for the air pollution level or air quality and plot on graph paper the results for the month. Find out what caused the peaks on your graph.

- ❑ 8. List ten ways in which you might actively work to improve the environment in which you live. Put four of these into practice.
 1. _____
 2. _____
 3. _____
 4. _____
 5. _____
 6. _____
 7. _____
 8. _____
 9. _____
 10. _____

- ❑ 9. Find a Spirit of Prophecy quotation and a Bible text pertinent to ecology, and be able to explain their relevance and application to our day.

Spirit of Prophecy _____

Bible Text _____

Explanation _____

Ecology, Advanced

- 1. Have the Ecology Honor.
- 2. State the first and second laws of thermodynamics and explain how they are important to ecology.

First law _____

Second law _____

Explanation _____

- 3. Explain the three basic trophic (feeding) levels and give a good example of a plant or animal for each.

Levels

Example

1. _____

2. _____

3. _____

- 4. Explain or diagram the three types of ecological pyramids in the food web. Give an example of each layer of the pyramid.

1. _____

2. _____

3. _____

- ❑ 5. Define the biogeochemical cycle, and explain or diagram all the basic components the cycle passes through.

- ❑ 6. Diagram or explain the basic steps in the flow of energy through the biotic environment (element) of an ecosystem. Begin with the sun.

- ❑ 7. Explain Liebig's Law of The Minimum and Shelford's Law of Tolerance, and state how these laws tell us how and why certain plants and animals become endangered or are eliminated when their habitat or community gets disturbed OR out of balance.

Liebig's Law _____

Shelford's Law _____

- ❑ 8. Choose a biological community in your area, such as a forest or woods; a swamp, lake or pond; pasture or meadow grassland; or a canyon or creek woods, etc., that is disturbed or ecologically out of balance in some way.

Make a description of it, including how and to what extent it is disturbed. Then make recommendations as to how the community could be improved and, where possible, follow through and help to improve it in some way.

- ❑ 9. Spend a minimum of 20 hours doing active, productive work on an ecology project in your area. This may be done individually or as a group. Describe the project in general, but report specifically on your part in it.

❑ 10. Define the following terms:

Community _____

Ecological balance _____

Raw materials _____

Saprobe _____

Photosynthesis _____

Decomposer _____

Chemosynthesis _____

Producer _____

Autotrophy _____

Consumer _____

Heterotrophy _____

Limited factor _____

- ❑ 11. Find a Spirit of Prophecy quotation and a Bible text pertinent to ecology and explain their relevance and application to our day.

Spirit of Prophecy _____

Bible Text _____

Explanation _____

NOTE: These requirements may be expressed either verbally or in writing to a youth leader. An instructor is recommended but not required for this honor. Counsel with your youth leader or instructor before beginning requirements seven, eight and nine.

Date completed _____

Instructor's Signature _____