

Forest Scavenger Hunt

Exploring Your Word

National Science Education Standards

- * Standard C: *Life Sciences* — Structure and function in living systems
- * Standard C: *Life Sciences* — Populations and ecosystems.
- * Standard F: *Science in Personal and Social Perspectives* — Populations, resources, and environments.



OVERVIEW

In this activity, students take part in an outdoor scavenger hunt to identify and review roles of organisms that make up a forest ecosystem.

OBJECTIVES

Students will:

1. Identify concepts and components of a forest ecosystem.

SUBJECTS

Science

VOCABULARY

broadleaf, carbon dioxide, carnivore, commensalism, conifer, consumer, detritivore, ecosystem, erosion, fungus, herbivore, interdependence, invertebrate, mammal, microscopic organism, oxygen, mutualism, nonliving element, omnivore, parasitism, photosynthesis, predation, producer, recycle, respiration, symbiosis

TIME

45 minutes or more

MATERIALS

Copy of the scavenger hunt list for each group

BACKGROUND

Ecosystems are systems formed by the interaction of a group of organisms with each other and their environment. Ecosystems include interdependent plants, animals, the physical environment, and the ecological processes (such as exchange of matter and energy) that connect them. Areas of different sizes can be considered ecosystems, depending upon who is drawing the lines of distinction. A jar of pond water, a rotting log, a grassland, or the entire earth can each be considered an ecosystem. In this activity, the term ecosystem will be used to represent the entire earth. The entire earth's ecosystem is commonly referred to as the biosphere.

On earth, there are geographic areas in which the combination of climate, topography (lay of the land), and geology determine what types of plants and animals grow and live there. These areas are called ecoregions. A desert, with its characteristic dry climate, sandy soils, and unique wildlife is an example of an ecoregion. Other examples include grasslands, rainforests, coniferous and deciduous forests, oceans, arctic areas, fresh water streams, riparian zones, and wetlands. All of the ecoregions on earth interact to form one large ecosystem.

Human cultures have developed within different ecoregions and have been sustained by them. All of the resources humans have depended on for survival and comfort have come from natural resources. Over time, attitudes and beliefs about the natural world and the use of natural resources have changed. In the not-too-distant past, the human population was sparse compared to the natural resources available. Human impact on ecoregions was minimal. As human populations have increased, so have demands on various ecoregions. Some parts of the ecosystem are being heavily impacted and some species have become extinct.

As people develop a better understanding of ecological functions and their place in the ecosystem, they are incorporating these ideas into the practice of natural resource use and management. A recent philosophy adopted by many natural resource agencies for managing the earth's resources is called ecosystem management.

Ecosystem management is the careful and skillful use of ecological, economic, social, and business principles in managing ecoregions as part of the larger ecosystem. This management's goal is to produce, restore, or sustain ecosystem integrity over the long-term. When ecosystem managers talk about maintaining the integrity of ecosystems, they mean retaining the ecosystem's biodiversity (variety of living organisms) and the structure and organization of the ecosystem. The need to conserve biodiversity is at the heart of ecosystem management.

While protection of biodiversity is of great importance, ecosystem managers must also consider human needs. People want ecoregions to be maintained for various uses, experiences, products, and services. Recreation, spiritual renewal, economic growth, timber and minerals for homes and other products, and forage for wildlife and domestic range animals are examples of human needs that may all come from a single ecoregion. The ecosystem manager must take the wide variety of human needs into account, along with the best scientific knowledge about ecosystems, in order to manage natural resources for sustainable use over time.

ACTIVITY

1. Before distributing the scavenger hunt list, add specific animals, plants or other items which represent your local area.
2. Review the list of items together. Help students define unfamiliar terms.
3. Explain that some items on the “Forest Scavenger Hunt List” require creative thinking. *For example*, students may not see specific animals, but they could find animal signs such as droppings, browse marks or tracks. Similarly, students will not see **carbon dioxide**, but they can deduce its presence by their own presence or the presence of animals that breathe it out, or by plants which use it in **photosynthesis** and **respiration**. Evidence of **sybiosis** might include a **parasitic** growth on a plant, a deer or moose (which requires **microscopic organisms** to digest its food), a swallow (which must have holes in trees made by woodpeckers or fungi to survive), or seeds that stick to someone’s socks.
4. Explain the rules:
 - Although students can review the Glossary, they may not write anything down until the hunt begins. (b) When students find an item, they are to **write each “find” on their list rather than collecting it**.
 - Students can use the same item more than once on the list as long as the item fits more than one category.
 - The search ends when any team finds one example of each item on the list, or at the end of a specified time.

5. Once the class is outside, set clear boundaries for the hunt. Remind students to respect wildlife and the forest ecosystem by leaving plants as they find them.
6. When the search ends, the first team finished reads aloud its list, explaining why their items are examples or evidence. Other teams follow with items that they found which were different from the first team’s list.
7. All teams cross from their list anything that another team also listed. Any incorrect answers must also be crossed off. Each team then adds the number of allowed items remaining on its list and scores one point per item. The team with the most points wins.

EXTENSIONS

Students write a description of the forest ecosystem using the scavenger hunt list. Students explain the interconnections.



Credit

This activity is adapted with permission from the Alaska Wildlife Curriculum. The Alaska Wildlife Curriculum was developed by the Alaska Department of Fish and Game. Go to <http://www.adfg.state.ak.us/> for more information about this outstanding environmental education curriculum.



Name _____

Student Page

Forest Scavenger Hunt List

Find examples or evidence of the following and list them in the space at the right or on another sheet of paper:

- a producer
- a carnivore
- a symbiosis
- photosynthesis
- parasitism
- an insect
- a detritivore
- an herbivore
- mutualism
- predation
- commensalism
- an omnivore
- an animal
- a fungus
- a plant
- microscopic organisms
- a nonliving element
- an invertebrate
- a mammal
- interdependence
- a broadleaf
- a consumer
- a tree
- water erosion
- a bird
- oxygen
- humans
- carbon dioxide
- conifer
- recycling of minerals
- a tree or plant that tolerates shade
- a tree seedling
- a tree that died
- a tree that is dying
- a place where two different kinds of trees grow next to each other
- moss on a tree

Forest Ecosystem Scavenger Hunt