

Field Enhancement 3: Forest Habitat Scavenger Hunt

NUTSHELL

In this lesson — in a schoolyard, park, or forested area — students go on a scavenger hunt and play a game to learn about habitat needs of organisms in a forest.

ENDURING UNDERSTANDINGS

- Ecosystems structure consists of different types of organisms (e.g., producers, consumers) interacting with one another and their environment. Humans are part of ecosystems.
- Forests impact air and water quality, prevent soil erosion, and provide habitat for wildlife.

ESSENTIAL QUESTION

- How does an ecosystem meet the needs of the organisms it contains?

OBJECTIVES

Upon completion of this lesson, students will be able to:

- Classify organisms as producers, consumers, and decomposers.
- Explain why a forest will or will not meet the needs of an organism.

SUBJECT AREA

Science

LESSON/ACTIVITY TIME

Total Lesson Time: 50 minutes

- Introduction.....10 minutes
- Activity25 minutes
- Conclusion.....15 minutes

STANDARDS CONNECTIONS

Standards for this lesson can be viewed online at the LEAF website (www.leafprogram.org).

CLASSROOM LESSON CONNECTIONS

This lesson ties closely with **Lesson 2, What Makes A Forest** and **Lesson 3, Forest Energy Flow**.

BACKGROUND INFORMATION

Energy is the ability to do work. We use energy for everything we do, including eating, running, thinking, and even sleeping. The sun is the source of energy on the earth. Plants use energy from the sun to change water and carbon dioxide into sugars (or food). Plants are called **producers**. Only plants can produce their own food. All other organisms must get their food from another source and are called **consumers**. Herbivores are consumers that eat only plants. Carnivores eat only other animals. Omnivores eat both plants and animals.

One special kind of consumer is called a decomposer. All plants and animals die at some point. If it weren't for decomposers, the **nutrients** they contain would get locked up in the dead organisms. Decomposers break down dead material and release nutrients back into the soil so that new plants can grow.

Let's look at a food chain. A tree uses energy from the sun in photosynthesis to make food energy for itself. A deer (a herbivore) comes along and nibbles leaves from the tree. Later, a wolf (a carnivore) eats the deer. At some point, the wolf dies. Bacteria and other decomposers break down the flesh and release nutrients back into the soil. Decomposers will also break down the tree when it dies and consume parts of the deer that the wolf left behind.

All organisms have needs that must be met for them to survive which depend on if the organism is a plant or an animal. These needs relate to where their energy comes from, nutrients, water, and shelter.

PROCEDURE

Introduction - Basic Needs

1. Take your students to the area you have chosen for the scavenger hunt.
2. Begin the lesson with a series of questions to get students thinking about what plants and animals need. **NOTE:** This information about trees should be familiar to students who have completed **Lesson 1, To Be a Tree**.
 - Ask students what a tree needs. (*Nutrients, sunlight, water, air, and space.*)
 - Ask students why trees don't need food. (*A tree is a producer and uses light from the sun to produce its own food.*)
 - Ask students what an animal needs. (*Food, water, shelter, air, and space.*)
 - Explain that organisms that need to eat other organisms are called consumers. Consumers might eat producers or other consumers.
 - Explain that all plants and animals die at some point. **Decomposers** are consumers that turn the organisms they eat into nutrients that producers can use. Ask for more examples of decomposers. (*Bacteria, fungi, insects like beetles, and worms that eat dead material.*)

SAFETY PRECAUTIONS

Visit the teaching site ahead of time to locate any hazards such as hanging branches, protruding tree roots, holes, poison ivy, stinging nettle. Encourage students to walk, not run, at all times when in a forested area.

MATERIALS LIST

For Each Group of 2 to 3 Students

- Copy of Student Pages **1A-D, Habitat Scavenger Hunt**
- Pencil
- Clipboard or notebook to use as a writing surface

For the Teacher

- Teacher Page **1, Producer/Consumer Questions**

For the Class

- Three index cards with “producer” and “consumer” and “decomposer” written on them

VOCABULARY TERMS

Consumer: An organism that can't produce its own food energy and must get it by eating producers or other consumers.

Decomposer: An organism that gets its food energy from dead parts of other organisms.

Energy: The ability to do work (e.g., grow, reproduce, move).

Habitat: A place where a plant or animal can get the food, water, and shelter it needs to live.

Nutrients: The minerals that a tree needs to live and grow.

Producer: An organism that produces its own food energy by using sunlight, water, and carbon dioxide in the process called photosynthesis. Plants are producers.

Activity - Scavenger Hunt

1. Explain that they will go on a scavenger hunt to find out if this forest can meet the needs of specific organisms. Divide your students into groups of two or three and give each group Student Pages **1A-D, Habitat Scavenger Hunt**, a pencil, and a clipboard or notebook to use as a writing surface. Note that “bison” is an example of something that does NOT get its needs met by the forest because it is a grass grazer and lives in open prairies.
2. Explain that each group will work together to complete the scavenger hunt. During the hunt, students will look for needs of the organisms listed.
3. Before sending students on the scavenger hunt, set boundaries for where they should and should not go.
4. After approximately 15 minutes, call students back together and ask each group to report on what they found. Discuss what they did and did not find.

**“When we plant a tree,
we are doing what we can to
make our planet a more
wholesome and happier
dwelling-place for those
who come after us
if not for ourselves.”**

★ *Oliver Wendell Holmes* ★

Conclusion - Producer/Consumer/Decomposer

1. Line up three index cards in the middle of a large open space. (The word “producer” appears on one card, “consumer” on another, and “decomposer” on the third.)
2. Divide your students into two teams and number the students on each team 1-20. Some students may have more than one number.
3. Have the teams stand on either end of the open space, facing each other, with the cards in the middle.
4. Read out loud one of the questions listed on Teacher Page **1, Producer/Consumer Questions**, and then call out that number. The person with that number from each team will run to the center and try to be the first person to grab the card with the correct answer. (The answer to every question is producer, consumer, or decomposer.) If you are keeping score, give one point to the team that wins each round. The winner of the round puts the card back down in the center of the playing area and both players return to their teams.
5. Continue by reading a different question and calling out the new number.

SUMMATIVE ASSESSMENT

Give each student a piece of paper and some crayons. Ask them to draw and label one producer, one consumer, and one decomposer in the forest and how the energy moves through the system by making a model/map with arrows. Post the pictures on a bulletin board.

PRODUCER/CONSUMER QUESTIONS

Read the following questions in random order.

- A. What type of organism can make its own food? Producer
- B. What type of organism eats plants to get energy? Consumer
- C. What type of organism is mold?.....Decomposer
- D. What type of organism is a pine?..... Producer
- E. What type of organism is a mouse?..... Consumer
- F. What is an organism that recycles nutrients back to the soil?Decomposer
- G. What type of organism doesn't need to eat? Producer
- H. What is an organism that hunts for food called?..... Consumer
- I. What type of organism does an oak tree need to make nutrients available?.....Decomposer
- J. Which organism can turn a dead tree into soil?.....Decomposer
- K. What type of organism are you? Consumer
- L. What type of organism are ferns?..... Producer
- M. What is an organism that is usually green called?..... Producer
- N. What is an organism that breaks down dead animals called?.....Decomposer
- O. What type of organism is a mushroom?Decomposer or Consumer
- P. What type of organism is an oak?..... Producer
- Q. What type of organism is a bear? Consumer
- R. What type of organism eats animals to get energy?..... Consumer
- S. Which type of organism does a consumer rely on for food? Producer
- T. What type of organism does a decomposer consume?Producer or Consumer or Decomposer

HABITAT SCAVENGER HUNT

| Organism | Example Needs | What evidence do you see that meets the organism's needs? | Can the organism get what it needs? |
|------------------------|---|---|-------------------------------------|
| Chipmunk (Consumer) | <p>FOOD: seeds and nuts like acorns, maple seeds</p> <p>WATER: pond, river, lake, puddle, drops of water on plants</p> <p>SHELTER: hollow log, hole in the ground</p> | | |
| Deer | <p>FOOD: green plants, buds and twigs, corn, acorns</p> <p>WATER: lake, river, puddle, pond</p> <p>SHELTER: forests, fields, close to humans</p> | | |
| Owl | <p>FOOD: small rodents (mice, shrews, voles), insects, small mammals</p> <p>WATER: eating their prey, open water</p> <p>SHELTER: trees, hole in the ground, barns, caves</p> | | |
| Mouse | <p>FOOD: seeds and nuts like acorns, maple seeds</p> <p>WATER: pond, river, lake, puddle, drops of water on plants</p> <p>SHELTER: hollow log, hole in the ground</p> | | |

HABITAT SCAVENGER HUNT

| Organism | Example Needs | What evidence do you see that meets the organism's needs? | Can the organism get what it needs? |
|------------|--|---|-------------------------------------|
| Oak Tree | SUNLIGHT: a lot WATER: a medium amount SPACE: a large amount | | |
| Maple Tree | | | |
| Mushroom | SUNLIGHT: likes shade WATER: likes moist places SPACE: a small amount | | |
| Worms | | | |

HABITAT SCAVENGER HUNT

| Organism | Example Needs | What evidence do you see that meets the organism's needs? | Can the organism get what it needs? |
|-------------|--|---|-------------------------------------|
| Woodpecker | <p>FOOD: a variety of insects, fruits, nuts, and acorns</p> <p>WATER: pond, river, lake, puddle, drops of water on plants</p> <p>SHELTER: cavity (holes in trees) nesters, particularly dead trees or snags</p> | | |
| Bison | | | |
| Raspberries | | | |
| Moth | | | |

HABITAT SCAVENGER HUNT

| Organism | Example Needs | What evidence do you see that meets the organism's needs? | Can the organism get what it needs? |
|----------|---------------|---|-------------------------------------|
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