



Lesson Time: 15–20 minutes

Who Am I?

Objectives & Outcomes

Lesson Objectives: Students will investigate the roles of producers, consumers, and decomposers within an ecosystem.

Lesson Outcomes: *Students will be able to...*

- identify an organism as a producer, consumer, or decomposer
- compare and contrast the roles of producer, consumer, and decomposer

Subject Area Connection: Science

Background

Studying ecosystems allows students to appreciate the interconnectedness of nature. Ecosystems are communities of living and non-living things. Both matter and energy flow through an ecosystem. However, while matter is conserved, energy is lost and not recycled. A food web shows the transfer of energy from one organism to another within an ecosystem. Producers, consumers, and decomposers comprise the living organisms within an ecosystem. Producers, like plants, make their own food through photosynthesis. Consumers obtain their food by eating something else. Decomposers, like fungi and bacteria, use decomposing matter as fuel. Each of these organisms has its unique role within the ecosystem. Non-living parts of an ecosystem include air, water, sunlight, and soil.

“Studying ecosystems allows students to appreciate the interconnectedness of nature.”

Getting Ready

Teacher Preparation: To prepare for this lesson, label each sticky note with one of the following words: bird, worm, tree, bacteria, grass, mouse, fungi, fish, plankton. Create enough sticky notes so there is one for each student.

Materials Required:

- sticky notes
- pens or markers
- chalkboard or large chart paper

Introduction and Modeling

Begin the lesson by assessing prior knowledge by asking the students about the terms *ecosystem*, *producer*, *consumer*, *decomposer*, and *food web*. If needed, share the definitions of the terms with the class. Explain to students that they will be playing a game in which they will need to ask questions of their classmates to determine what organism is represented on the sticky note on their back. Encourage students to think about how they can identify their organism in as few questions as possible.

Key Vocabulary

producer: an organism that makes its own food.

consumer: an organism that obtains food by eating other organisms.

decomposer: an organism that breaks down dead organisms.

Procedure

1. Place a labeled sticky note on each student's back. Be sure they do not tell one another what organism they represent.
2. Ask students to walk around and talk with other students, asking questions until they are able to determine what organism they are representing.
3. Ask students to gather in groups based on the role their organism plays in the ecosystem: producer, consumer, or decomposer.
4. Students will work in groups to create a list of the characteristics of their organism and the role it plays within the ecosystem.

Discussion Questions

- What role does sunlight play in an ecosystem?
- If a plant makes its own food, why would it need an animal to help it survive?
- What effect can human activity have on an ecosystem? Describe both positive and negative effects.

Evaluation

Ask students to describe a scenario in which one organism is removed from an ecosystem.

Tips for Tailoring this Lesson

For Higher Grade Levels

- Ask students to focus on the interactions their organism has with the other organisms within their ecosystem.
- Ask students to create a food web for a forest ecosystem. Challenge them to include additional terms like *herbivore*, *omnivore*, and *carnivore* into their web.

For Lower Grade Levels

- Form groups of students by reading each organism name aloud and asking the class to decide which role the organism has within the ecosystem.
- Provide students with simple food webs and ask them to identify the producers, consumers, and decomposers.

Alignment to Standards and Frameworks

Common Core State Standards:

College & Career Readiness

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Anchor Standards for Writing

CCRA.W.2 Write informative/explanatory texts to examine and convey complex ideas and information clearly and accurately through the effective selection, organization, and analysis of content.

Anchor Standards for Language

CCRA.L.4 Determine or clarify the meaning of unknown and multiple-meaning words and phrases by using context clues, analyzing meaningful word parts, and consulting general and specialized reference materials, as appropriate.

Next Generation Science Standards

Next Generation Science Standards: based on the Framework for K–12 Science Education developed by the National Research Council. Publisher: Achieve, Inc. on behalf of the twenty-six states and partners that collaborated on the NGSS. ©2013 www.nextgenscience.org

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Develop a model to describe the cycling of matter and flow of energy among living and nonliving parts of an ecosystem. *[Clarifying Statement: Emphasis is on describing the conservation of matter and flow of energy into and out of various ecosystems, and on defining the boundaries of the system.] [Assessment Boundary: Assessment does not include the use of chemical reactions to describe the processes.]*