



Energy Flow: Interconnectedness of Organisms in Ecosystems

Producers, Consumers, Decomposers

Key Question

How do different organisms obtain energy they need to survive, grow, and reproduce?

Objectives

- Students will **investigate** how different organisms obtain energy.
- Students will **identify** producers, consumers, and decomposers.

Grade: 2-5

Time: 45 minutes

Location: Classroom

Materials

- Internet Access
- Science textbook, encyclopedias, and other print resources
- [Worksheet](#): “Food Web Roles: Expert Groups Worksheet” (in appendix)
- Photos for engager activity (in appendix)

Culminating Activity

Students will create short presentations and teach each other about producers, consumers, and decomposers and think of local and global examples.

Directions

Engage (5 minutes)

- Quick write: Ask students to answer the question: What did I eat for lunch today?
- Then, [project or hold up images of three organisms](#): one plant, one animal, and one fungi that can be found in their community.
- Students should then answer the same question for these three organisms (what did these organisms eat for lunch today?) Ask a few students to share their responses.
- Ask students: *Why do we eat food? (Answer: for energy to grow and maintain body systems)*
- Each of these organisms obtains **energy** in a different way, which we will explore next.

Explore/Explain: Ecological roles Each-One-Teach-One (30 minutes)

All organisms need **energy** in order to survive, grow, and reproduce. They obtain this energy in a variety of ways. Ultimately, the energy in an ecosystem comes from the sun, and flows through an ecosystem from one organism to another through complex ecological relationships. Some organisms can use the sun’s energy to produce their own food; while others like humans need to eat food in order to gain energy.

Divide students in groups and assign terms to each group.

Break students into small groups of 3-4 individuals and assign each of them one of the following groups to research: **primary producer, consumer, decomposer, herbivore, omnivore, carnivore**. Explain that

they will do an “Each-one-teach-one” with each of these terms.

- **Have each group research one ecological role**

Have the groups spend 15 minutes using online and print resources to gather information about the ecological role. Use the following questions as guidance:

- What does your word mean? What is your ecological role?
- How does your group obtain energy, and does it provide energy for anything else?
- What are some examples of organisms that fit into this group from around the world?
- What are some examples of organisms that fit into this group from our local ecosystems?

- **Have students prepare a short skit, poem, or song**

Give each group five additional minutes to prepare a song, skit, or other short performance to teach the rest of the class about their ecological role, making sure to give information about each of the above questions.

- **Have groups fill out the handout with information for each role**

Give each student the Food Web Roles: Expert Groups Worksheet. Students will have 3 minutes to present their findings to the group in a creative way—through a skit, song, or other presentation. Have other students fill out a graphic organizer as each group presents. After each presentation, review with students the ecological role and examples of this in their local communities.

Evaluate (5 minutes)

Discuss the different ecological roles.

Have a whole class discussion about the different roles and the examples they gave. Have students compare the local examples to the global examples for each. Ask: **Which did they find more difficult to research: local or global?** Explain that students will use this information for the next activity, about food web systems.

Extensions

- Have a “Producer, Consumer, Decomposer Scavenger Hunt.” Bring students outside to the schoolyard, garden, or your school’s designated exploration area. In new small groups, have students look for evidence of producers, consumers, and decomposers and draw the organisms or signs of the organism on their worksheet.

Next Generation Science Standards

5-LS1-1. Support an argument that plants get the materials they need for growth chiefly from air and water.

5-LS2-1. Develop a model to describe the movement of matter among plants, animals, decomposers, and the environment.

5-PS3-1. Use models to describe that energy in animals’ food (used for body repair, growth, motion, and to maintain body warmth) was once energy from the sun.

**3-LS1-1. Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

**If discussion about the feeding habits of animals at different life stages (some insects eat meat/carrion as larvae, vegetation as adults)



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Name _____ Date _____

Food Web Roles: Expert Groups Worksheet

Directions: Use the following chart to organize information about different ecological roles.

Ecological Role	Definition	Examples around the world	Examples in the local area
Producer			
Consumer			
Decomposer			
Herbivore			
Omnivore			
Carnivore			

Appendix: Photos for Engager





Image Attribution
Prickly Pear (*Opuntia*) by Steven J. Baskauf CC-BY-NC-SA
Green Tree Frog (*Hyla cinerea*) by Royal Tyler CC-BY-NC-SA
Oyster Mushroom (*Pleurotus ostreatus*) by fishfarmin CC-BY-SA