

Foldable Cedar Glade Food Web

OVERVIEW: Students will learn that organisms in an ecosystem are very dependent upon each other. A **Food Web** shows the feeding relationships between organisms. *Herbivores* are organisms that eat plants. *Carnivores* are animals that eat other animals. An *omnivore* eats both plants and animals for food. A *scavenger* eats dead animals or plant matter.

GRADE LEVEL: 7 – 12

TIME: one class period (55 minutes)

SETTING: Classroom

OBJECTIVES: Students will construct a foldable food web for organisms living in the cedar glade ecosystem; students will determine if an organism is an herbivore, carnivore, omnivore, or, scavenger by placing them in the appropriate levels.

LEARNING STANDARDS: Science CLE 3210.2.1; 3210.3.1

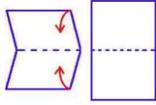
QUESTION: What type of food web would be appropriate for the Cedar Glade ecosystem? What types of organisms would you find in the Cedar Glade?

MATERIALS: Student handout
Markers
Cedar Glade Species List (appendix)
8 ½ by 11 sheets of paper for student foldables

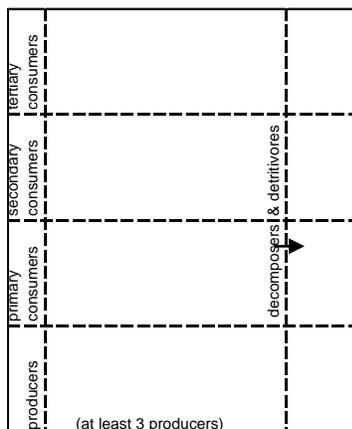
BACKGROUND: Organisms living in a particular area are interdependent upon each other. A food web is composed of several interconnected food chains and shows the feeding relationships between the organisms. A food web should clearly show the direction of energy flow through the ecosystem.

STUDENT INSTRUCTIONS:

1. Using the Cedar Glade Species List, select at least 10 organisms to put on your web. *Use at least 3 producers.*
2. Orient your folding paper so that the 8 ½ ends are at the top and bottom. Make a ½ inch fold along the length of the paper (left side). Make a 1 inch fold along the length of the paper (right side). Unfold the borders and fold the entire paper

in half (“hamburger fold” ). Then hamburger fold again so that you have folded the paper into 4 equal parts.

3. Open paper and label the “folds” as follows:
 - a) Left $\frac{1}{2}$ inch folds (from the bottom): producers, primary consumers, secondary consumers, tertiary consumers
 - b) Middle Folds: start by entering at least 3 producers in the bottom level. Add primary consumers in the second (from bottom) level. Add the secondary and tertiary consumers in the next two levels. (*example below*)
4. Draw a food web showing the interrelationships between the organisms. Remember that the arrows are drawn FROM the organism that is consumed because that is where the energy is going.
5. Use the folded sections to organize the trophic levels. For example, all the primary consumers would be found on the second folded section.
6. Use resource materials available in the room to determine more information, if needed. You may use plants and animals other than the ones listed, if you wish.
7. Add decomposers and detritivores to your food web by entering them on the right side (1 inch) fold. These organisms would be found at each trophic level.
8. Tape your food web to the board and share with the class.



Name _____ Period _____ Date _____

Types of Organisms: Choose organisms from the information sheets to use on your food web and list them in the appropriate category below.

Herbivores:

Carnivores:

Omnivores:

Scavengers:

Extension Activity: Calculate the amount of energy transferred from first trophic level to the next. Divide energy in trophic level two by energy in trophic level 1 and multiply by 100. This amount is the percent of energy transferred. Remember to add a percent sign. Calculate the final energy (in kCal) found at the fourth trophic level (tertiary consumers). *use 10,000 kCal for the first trophic level (producers).

Questions & Analysis:

1. How many different food chains were represented in your web?
2. Is there a relationship between the complexity of a food chain and its ability to survive environmental changes? Explain.
3. What is the overall effect to a food chain if one of the levels is removed?
4. What is the role of the sun in your food web?

