



Owls From the Inside Out

Constructing a Food Web

Objective: To construct a food web with an Owl at the highest level and grass and seeds at the lowest level.

Materials:

- Paper
- Colored pencils, markers or crayons

Procedure:

Have students construct a food web that includes the prey they found in their owl pellet dissection. Have students draw pictures of the organisms in their food web. Listed are some food web organism ideas:

- Moth eats flower
- Beetle eats leaves, flowers, and seeds
- Grasshopper eats leaves, flowers, and seeds
- Lizard eats flowers, seeds, grasshopper, beetle, and/or moth
- Mole eats grasshopper, beetle, and/or moth
- Shrew eats grasshopper, beetle, and/or moth
- Bird eats seeds, grasshopper, beetle, moth, and/or worm
- Vole eats plant roots, grass, seeds, grasshopper, beetle and/or moth
- Mouse eats grass, seeds, grasshopper, beetle, and/or moth
- Owl eats field mouse, vole, bird, shrew, mole, lizard, grasshopper, beetle, and/or moth

Explain that a food web is a relationship diagram showing organisms arranged by energy flow from organisms at the lowest level to the highest. Energy passes from one organism to another on a higher level through the eating of the lower organism.

There are usually four levels in a food web: the **producers**, green plants which make food from water, carbon dioxide, and some soil minerals using energy from sunlight; the **primary consumer** level which consumes products such as grass and seeds; **secondary consumers** which are meat-eaters that eat the plant eaters, and **tertiary consumers** that are meat-eaters who eat other meat-eaters.

A sample food web from highest to lowest level:

Owl eats Bird > Bird eats Insect > Insect eats Seeds and Grass

Guess that Owl

Objective: To recognize and identify the calls of different owls

Materials:

- Recording of owl calls
- CD player or tape recorder
- Pictures of the owls – good photos and illustrations can be found at the University of Michigan Animal Diversity Web: <http://animaldiversity.ummz.umich.edu/site/index.html>
- Dice

The game can be played in many different ways.

- Begin by playing recordings of different owl calls, concentrating on North American species. Show the students a picture of each owl with its name as its call is played. Stop the tape after each call and have the children try to make the same sound as the owl. Now test student's memories of the different calls.
- Line up your students at one end of the classroom. In the middle of the room play a recording of an owl call. Whoever is the 1st person to guess the call gets to take one step towards the teacher. The 1st person to reach the teacher is the *ultimate owl birder*. If more than one student guesses the sound at the same time, everyone who guessed correctly can move forward.
- Create a maze through the classroom with construction paper laid on the floor. The class must work together to get through the maze. Each time one person in the class guesses the owl call correctly, the entire class can move forward one piece of construction paper (space out the construction paper and number them).
- Create a maze with different starting points and break the class up into 2-4 teams. The goal is for the team to make it to the center of the maze. The teams can take turns guessing the owl calls. If a team guesses correctly they can move forward 1 square.
- Play any of the maze games, but let the teams roll a die to see how many spaces they can move. Put loose a turn, go back ___ spaces, jump ahead ___ spaces, on some of the construction pieces.

Owl and Mouse

Objective: To experience hunting by sound as owls do

Have students make a circle & hold hands. Choose two students to go to the center of the circle, one to be an owl, the other a mouse. The other children will be the trees.

- Blindfold the "owl", and gently spin them around a few times. The goal is for the owl to catch the mouse.
- With the circle as the boundary, the owl must follow and tag the mouse. Give the mouse some paper to crumple and rustle.
- When the owl catches the mouse, choose different students to play the game.
- Have the trees be quiet at first – if the owls are catching the mice too quickly, have the trees say "sshhh..." and sway in the wind.

- To make the game even more challenging, make the circle bigger.

Hungry Owls

Objective: Demonstrate how an owl can struggle to find enough food to stay alive.

Materials:

- Picture of an owl or make an owl with cardboard, markers, etc.
- Counters to represent units of energy (coins, plastic disks)
- Dice

Begin the game by giving your Owl ten reserve counters stored as fat. Each week the owl uses up three counters of energy to stay alive. Take these away at the beginning of each round, or before each dice throw. Throw a dice to find out how many voles the owls catches during the week. For each vole caught, add one counter to the Owl. The Owl cannot store more than ten units of energy at a time, so if you catch more voles than there are room for, put the extra counters back. Does your Owl ever run out of energy and die?

Extension: Play the game in “winter conditions.” Many of the voles are now hidden under the snow. Only four voles can be caught each week, so even if you throw a five or six, you can add only four counters to the owl. How many weeks does the owl survive this time?

Adapted from: *175 Amazing Nature Experiments*

How Many Owls Can Live in the Woodland?

Objective: To define a major component of habitat and identify a limiting factor.

Background information: Bird habitats limit bird populations through the influence of shelter, food supply, and territoriality. When food supplies are reduced, competition becomes more intense. Some adult birds might temporarily move to seldom used areas of their home range, many miles away, in order to locate food. If food is unavailable in the area, individuals may become malnourished, stressed, sick and unfit for fall migration or winter survival. The purpose of this activity is for students to recognize the importance of suitable habitat. Inadequate food and/or shelter are two examples of what is called a limiting factor – something that affects the survival of an animal or a population of animals. In this activity food will be the limiting factor for the students playing the role of an Owl hunting for food.

Materials:

- Four different colors of construction paper to make food cards (a couple sheets each of red, yellow, orange and blue)
- Black felt pen
- Envelopes (one per student)
- Pencils
- Eye patch

Procedure:

Make a set of 2”x2” cards from the colored construction paper. NOTE: There should not be enough food cards for every “Owl” to survive. For a class of 25, for example, make 32 cards of each color card for each of the three food sources. Each student is required to collect at least six food cards to survive. Make and distribute the food cards accordingly depending on the size of your class. The color of the card determines the type of food it represents:

Orange: rodents (voles, shrews and mice)

Yellow: Insects and other invertebrates (worms, larvae, spiders)

Red: small birds

Blue: water (to calculate how many water cards to make, multiply the number of students by 1.25 (round to the nearest whole number). Optional: divide the water squares into five equal piles and mark each group with one of the following letters: R, L, ST, SP and M. These letters represent all the places where a bird could find water: rivers, lakes, streams, springs and marshes.

1. In a fairly large open area, scatter the colored pieces of paper. Tell the students that the pieces of paper represent various kinds of Owl food, but do not tell them what the colors and letters represent. The students will gather different colored squares to represent a variety food for their Owl.
2. Have each student write his or her name on an envelope. This will represent the student's nest site and should be left on the ground (anchored by a rock if doing the activity outdoors).
3. Have students line up on the starting line, leaving their envelopes between their feet on the ground. Begin the activity with the following instructions: "You are now all Owls. Among you is a young male Owl who has not yet found his own territory. Last week he met up with a larger male Owl in the bigger bird's territory and before he could get away, he was hurt. He has a broken leg." (Assign one student as the injured Owl. He must hunt for food by hopping on one leg.) "Another bird is a young female Owl who hurt her eye on a thorn and is blind in one eye." (Assign one student to be the one-eyed bird. She must hunt with an eye patch on one eye.) "The third Owl is a mother Owl with two fairly small fledglings. She must gather twice as much food as the other Owls." Assign one student as the mother Owl.
4. All students must walk into the "woodlands" and hunt for their food. When students find a colored square, they should pick it up – one at a time and return it to their nest before going back and picking up another square. When all the colored squares have been picked up, the food gathering is over.
5. Have the students pick up their nest envelopes containing the food they gathered. Explain what that the colors represent different types of food. Ask each student to add up the total number of food items and water and write the total number on the outside of his or her envelope.
6. Using the chalkboard, list **blinded**, **injured**, and **mother**. Ask the different students playing these roles how much food they gathered and record the information. Tell the students that each Owl needs six food cards to survive. Which Owls survived? Was there enough food for all the Owls? Did the blinded Owl survive? Did the mother Owl find twice the amount of food needed for herself and her fledglings? What if she ate first? If the fledglings die, can she have more young in the future? (*In real life the mother owl eats first and the fledglings will eat whatever is left. The mother must survive for she is the hope for continuing the owl population. Only one fledgling needs to survive in order for the population to remain static.*) Each student should have also picked up at least one square representing a water source or he or she does not survive. Water can be a limiting factor and is an essential component of habitat. What defines a good habitat for an Owl? What limiting factors would influence the survival of Owls in an area?

Mythical Birds

Objective: To learn what the owl has meant to people in different parts of the world and throughout history.

Owls are the characters in the myths and legends of many different cultures. Read aloud some of these stories and talk about what they have meant to the people that created them.

Suggested stories:

- Kapo'i and the Owl God
- Menominee Myth: The Origin of Night and Day. The Rabbit and the Saw-whet (Owl).
- The Owl and the Woodpecker
- Aesop's fables: The Owl and the Birds; The Grasshopper and the Owl
- *Owl Eyes* by Frieda Gates

Extension: Have students create their own mythical story about an Owl.

Raptor Rehab

Owls and other raptors such as hawks are sometimes found injured or orphaned. There are a number of organizations that can help you learn about their rehabilitation and release. Contact these resources to learn more about their efforts to help raptors and, if possible, visit a wildlife rehabilitation center.

Michigan Wildlife Rehabilitators can be found at:

<http://www.southeasternoutdoors.com/wildlife/rehabilitators/michigan-rehabilitators.html>

- Howell Nature Center: <http://www.ismi.net/howellnature/>
- Bird Rescue of Huron Valley, 4600 Water Works, Saline, MI 48176 – 734.944.9600
- Marion Wildlife Orphanage: <http://marionwildlifeorphanage.5u.com/main.html>

National Wildlife Rehabilitation information can be found at:

<http://www.nwrawildlife.org/home.asp>