



**Professor:** Dr. Allison Downing

**Lesson:** Owl Pellets/Food Webs

**Grade:** 5/6

\*Adapted from Ansberry, K. R., & Morgan, E. R. (2010). *Picture-perfect Science Lessons, Expanded 2nd Edition : Using Children's Books to Guide Inquiry, 3-6*. National Science Teachers Association.

**MSCCR Science Standard:**

L.5.3B.2 Develop and use a food chain model to classify organisms as producers, consumers, or decomposers. Trace the energy flow to explain how each group of organisms obtains energy.

L.6.3.5 Develop and use food chains, webs, and pyramids to analyze how energy is transferred through an ecosystem from producers (autotrophs) to consumers (heterotrophs, including humans) to decomposers.

**Learning Objectives:**

TSW trace the movement of energy within a food chain/web.

TSW classify organisms by the function they serve in an ecosystem, i.e., producer, consumer, decomposer.

TSW recall the sun is the original source of energy on earth.

TSW communicate the parts of a food web within an ecosystem by developing a model.

**Materials:**

Owl pellet (per group)

Forceps (per group)

Handouts –

O-W-L Chart

Bone Chart

Food Web article

Draw Your Food Web

**Engage**

*“My friend and I found these strange pellets in her family barn. We are going to begin an O-W-L chart: Observe, Wonder, Learn. Let’s write down some things we observe about the pellet. For example, what color is it? Is it light or heavy? Big or small? What does it feel like?*

*Now let’s write down some things we Wonder about the pellet. For example, where did it come from?*

*These are owl pellets. Owls eat their food whole, but cannot digest the bones, fur, or feathers so they have to cough it up.”*

## Explore

Advanced Preparation:

Each student/group will receive one pellet and picking utensils (forceps, chopsticks, toothpicks, etc). Dissection may be completed over a paper plate, towel, or piece of paper for easy clean up.

*"In your groups, you will use the forceps to dissect or pull apart the pellet. It is ok to touch it and you will wash your hands afterwards. Use the bone chart to see which animals were consumed by the owl."*

Classroom teacher will circulate to make sure students can successfully identify the bones found in the owl pellet using the bone chart. Allow the students to have their own ideas as they work to observe, discuss, and draw conclusions, but offer guidance as needed.

## Explain

Class discussion following observations:

*An owl pellet forms 6-10 hours after the owl has eaten and it is then regurgitated (do you know that word?) 10-16 hours after the meal. This process keeps the owl healthy.*

*What can scientists (and ourselves) learn by studying owl pellets? (what the owl eats and how much it eats)*

*Why would this be a good method to use when studying the owls? (we can study owls without capturing the owl or harming it)*

*What types of animals were in your owl pellet?*

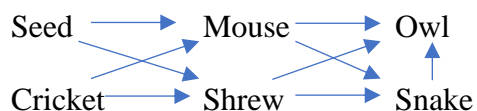
*Now let's go back to our O-W-L chart and write down some things you have Learned"*

Explain Food Chains and Food Webs:

Write an example of a simple food chain:

Seed → Mouse → Owl

Explain to students that when one animal eats another animal or plant, they both become part of a food chain. A food chain is the path that energy takes as one living thing eats another. The arrows represent the direction of the energy flow; in this case, the energy flows from the seed to the mouse to the owl. The Sun is the source of all the energy in a food chain. Plants use the Sun's energy to make food. Animals eat plants to get some of that energy, other animals eat those animals to get some of that energy, and so on. There are some simple food chains in nature, but usually two or more food chains link to form a food web. A food web is made of many food chains put together. Write another simple food chain below the first. Ask students how you could link the two chains to make a food web. For example:



Then ask students

? What is missing from the food web on the board? (the Sun)

Draw a picture of the Sun on the food web with arrows pointing to the seed and the berry.

### **Elaborate**

Have students read the Food Web article, then label the organisms: producer, herbivore, omnivore, and carnivore. Where would the sun and decomposers be included??

Use the following guiding questions as you encourage students to explain the food web image in their own words:

? What do the arrows represent? (the direction of the energy flow)

? What did the bat eat? What is your evidence? (Answers will vary.)

? Why did the crane eat? (to get energy)

? Where did the animal the hawk ate get their energy? (from eating plants or other animals)

? Why is the Sun an important part of your food web? (The Sun is the source of all the energy in a food web. Plants use the Sun's energy to make food.)

### **Evaluate**

“Are there any questions about food chains and webs? Now I want you to create your own food web that includes an owl. Do not use domesticated animals (dogs, cats) because their diets tend to be a little different.”

Using the evidence from their owl pellets and their understanding of food chains and webs, have students work in pairs to create a labeled pictorial, “Owl Food Web Poster,” including the owl, its prey, the food of the prey, the Sun, and energy flow arrows. Have students explain their posters to other teams.