

# SKELETONS: Museum of Osteology

## Owl Pellet Dissection

*Teacher Resource*

**Grade Levels: 1<sup>st</sup>-2<sup>nd</sup>  
55 minute program**

### **Kindergarten-8<sup>th</sup> grade Oklahoma Academic Standards:**

#### **K-ESS2-2 Earth's Systems**

K-ESS2-2: Construct an argument supported by evidence for how plants and animals (including humans) can change the environment to meet their needs.

#### **K-ESS3-1 Earth and Human Activity**

K-ESS3-1: Use a model to represent the relationship between the needs of different plants or animals (including humans) and the places they live.

#### **4-LS1-1 From Molecules to Organisms: Structure and Processes**

4-LS1-1: Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

#### **5-LS2-1 Ecosystems: Interactions, Energy, and Dynamics**

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

#### **MS-LS1-4 From Molecules to Organisms: Structure and Processes**

MS-LS1-4: Use arguments based on empirical evidence and scientific reasoning to support an explanation for how characteristic animal behaviors and specialized plant structures affect the probability of successful reproduction of animals and plants respectively.

**Program Overview:** The Owl Pellet Dissection Program will introduce students to the process of bone identification. Students will begin by discussing adaptations that help the owl catch and process prey. Participants will then sort various rodent bones as they extract them from the pellet, paying close attention to identifiable structures.

### **Learning Objectives:**

- Participants will successfully define adaptation and explain how the owl is specially adapted to catch and eat their prey.
- Participants will successfully identify various rodent bones found in their pellet.
- Participants will successfully communicate their observations to their team.

### **Background:**

Most birds cannot chew their food and owls are no exception. Owls usually swallow their food whole, digest the edible parts, and then expel the indigestible parts through their mouth as a pellet. These owl pellets are the regurgitated remains of an owl's meal, including all the bones of the animals it ate (usually small rodents).

Owl pellets are useful to researchers because they can find out quite a bit about an owl's lifestyle through careful examination of the pellet's contents. Since most of the prey's bones are not actually broken during the attack and the subsequent digestion process, they can be readily identified in the pellet. Most pellets include a skull or skulls, which makes identification of the prey relatively simple. If multiple prey are consumed in a short period of time, then only one large pellet is formed from their remains.

Studying owl pellets allows researchers to observe evidence of the food chain. A food chain shows how each living thing gets food, and how nutrients and energy are passed from creature to creature. Food chains begin with plant-life, and end with animal-life. Some animals eat plants, some animals eat other animals. A simple food chain could start with grass, which is eaten by rabbits, which are then eaten by owls.

### **Vocabulary:**

**Adaptation:** a process of nature in which an animal becomes better suited to its habitat

**Bird Crop:** an expanded, muscular pouch near the gullet or throat, used to temporarily store food

**Bird of Prey:** a predatory bird, distinguished by a hooked bill and sharp talons

**Camouflage:** a type of adaptation in appearance which allows an animal to blend in with its surroundings

**Carnivore:** an animal that primarily eats meat

**Food Chain:** the hierarchy of animals that eat one another – herbivores at base, going up and up to successively more elite predators

**Habitat:** soil, water, climate, plants and animals of a particular ecosystem

**Herbivore:** an animal that primarily eats plants

**Mimicry:** the superficial resemblance of two or more organisms that are not closely related

**Omnivore:** an animal that eats both meat and plants

**Owl Pellet:** the undigested parts of an owl's food, regurgitated

**Predator:** an animal that attacks and eats other animals

**Prey:** an animal that is attacked and eaten by other animals

**Proventriculus:** the narrow glandular first region of an owl's stomach between the crop and the gizzard

**Vertebrate:** animals with backbones

**Reference:** visit the SKELETONS: Museum of Osteology Education web page at:

<http://skeletonmuseum.com/education>

**Recommended Reading:**

Kalman, Bobbie, and Jacqueline Langille.

2009 *What Are Food Chains and Webs?* Crabtree Pub. Co., New York, NY.

Read, Tracy C.

2011 *Exploring the World of Owls.* Firefly Books, Richmond Hill, ON.

**While at SKELETONS:**

- Have students observe skeletal features of owl adaptations
- Have students find and discuss examples of predator-prey relationships
- Have students view rodent skeletons to compare dissected bones to full specimens