



Owl Pellets

What's in an owl pellet?

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BEST FOR GRADES

4-7

ESTIMATED TIME

25-45 Minutes

You Will Need

- Owl pellets
(can be purchased online at http://pelletlab.com/barn_owl_pellet)
- Medical Examination Gloves
(if you have a latex allergy or sensitivity, make sure to use latex-free ones)
- Tweezers
- Toothpicks
- Ruler
- Owl Pellet Bone Chart
(download from <http://bit.ly/2miLExM>)
- Owl Pellet Dissection Data Sheet (provided below)
- A flat surface to work on
(preferably not in the kitchen or around food)
- A disposable tray or piece of paper or foil that can be spread out over your work surface.

Directions

1. Ask student to create a testable question (a hypothesis).
Example: Are owls vegetarians? Record the question on your data sheet.
2. Put on your gloves and measure the length and width of your owl pellet. Record on your data sheet.
3. Carefully examine the exterior of the pellet. Write down your observations on your dissection data sheet and complete the prediction questions
4. Carefully use a toothpick to break apart the owl pellet and observe what is inside. Use a toothpick and your tweezers, as needed, to expose the bones for identification.
5. Use the owl pellet bone chart to identify the animal bones.
6. Using the information collected from the pellets, create a diagram of a food chain with an owl at the top level. Use an arrow to show which organism is the consumer or predator.
7. Dispose of all owl pellet materials and disposable dissection tools and place in an outdoor trash receptacle. Sterilize all non-disposable tools and surfaces with a 10% bleach solution. Take off your gloves, dispose of them, and wash your hands thoroughly!

****Note:** Pellets are sterilized prior to shipment, but have been known to still harbor salmonella and other bacteria. We recommend you wear gloves, sterilize the work area with a 10% bleach solution, and wash your hands thoroughly after experimenting. Please visit Owl Pellets in the Classroom: Safety Guidelines (<http://bit.ly/2mx0QDW>) for more information about how to work safely with owl pellets.



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Owl Pellets Discovery Questions & Keywords

Discovery Questions

Beginning the Experiment

What types of valuable information could be provided by studying an owl pellet?

What do we know about the digestive system of an owl based upon the pellets?

During the Experiment

What do we know about the diet of this particular owl based upon the pellets?

What kind of animals do you think are found in the owl's ecosystem?

After the Experiment

Other types of birds form pellets. What would you expect to find in the pellets of other birds, like a seagull?

Owls, hawks, and eagles are types of raptors (animals that have hooked beaks and sharp claws) and are therefore adapted for seizing prey animals. Hawks and eagles differ from owls in that they eat their prey animals by tearing them into small pieces, picking out the flesh and avoiding most of the fur and bones. They also have strong stomachs that can digest most of the bone material they might eat. The relatively small amount of indigestible bone and fur that remain will be compacted by their stomach muscles into a pellet similar to the owls. Do you think an eagle pellet would be as useful for dissecting as an owl's? Why or why not?

Keywords

Digestive System

The digestive system is responsible for breaking down food we eat into smaller components so that nutrients can be easily absorbed by the body and the waste discarded.

Dissection

To cut something apart (e.g., a plant, pellet, etc.) to examine the structure or relation of parts.

Food Chain/Food Web

A series of organisms interrelated in their feeding habits, the smallest being fed upon by a larger one, which in turn feeds a still larger one, etc.

Pellet

Pellets are the undigested parts of a bird's food, such as hair or bones, which are regurgitated (coughed up through the beak).



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Owl Pellet Dissection Data Sheet

Before dissecting your pellet, record the following data:

1. State your testable question (hypothesis):

2. Length of owl pellet: _____ inches Width of owl pellet: _____ inches

3. Draw an illustration of your pellet and describe the physical attributes of the pellet:

Illustration	Descriptions

4. How many bones do you predict you will find in your pellet: _____

5. What kind of animal bones do you predict to find in the pellet: _____

Experiment Data:

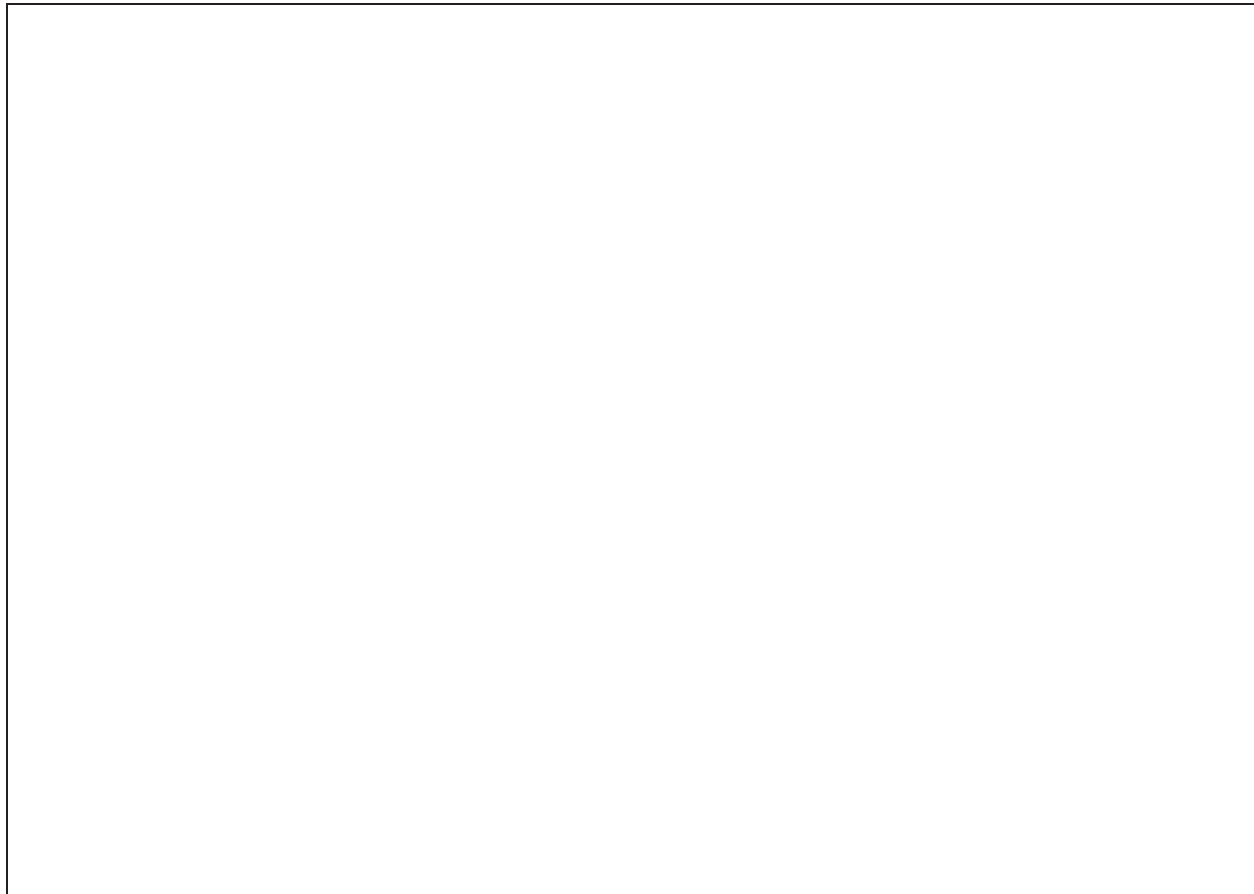
5. Carefully use a toothpick to break apart the owl pellet and observe what is inside. Use a toothpick to expose the bones for identification.

6. Sort the bones into separate groups using your bone chart.

7. Record your findings in the chart below:

Animal	Bone	Number Found

8. Using what you found in your owl pellet, try drawing the owl's food chain below:





Owl Pellets

What's in an owl pellet?

How does it work?

Owl pellets are masses of bone, hair, teeth, and feathers of various animals consumed by the owl. Pellets are produced and regurgitated by owls, hawks, eagles, and other raptors that swallow their prey whole or in large pieces.

Owls eat early in the evening and regurgitate a single pellet approximately 20 hours later. Owls do not have strong digestive enzymes in their stomachs, so the parts of their meal go undigested and form into wet, slimy pellets with even the most fragile bones preserved unbroken. Studies of dissected owl pellets provide information about changes in feeding habits that occur from season to season as well as the different species of animals and/or plants that are found in the owl's habitat.

This information allows us to see what role an owl plays in the ecosystem and how they have adapted to their environment. In ecosystems, plants and animals are all connected. If any one part is removed, it can affect the whole ecosystem. The feeding relationship in an ecosystem is called a food chain, or food web. Food chains only go in one direction. A food chain starts with what gets eaten and has arrows pointing towards what does the eating. By studying owl pellets, we gain an insight into which animals are included in their food chain.



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Discovery question answer key for parents and teachers.

Beginning the Experiment

What types of valuable information could be provided by studying an owl pellet?

Information about the varieties of food the owl eats. If you dissected many owl pellets over time you could also learn about their eating habits and if they change by season.

What do we know about the digestive system of an owl based upon the pellets?

You will likely be able to see fur, feathers, and even small bones in the pellet! This indicates that the owl does not have a very strong digestive system since those items were not broken down.

During the Experiment

What do we know about the diet of this particular owl based upon the pellets?

This answer depends on the scientist.

What kind of animals do you think are found in the owl's ecosystem?

This answer depends on the scientist.

After the Experiment

Other types of birds form pellets. What would you expect to find in the pellets of other birds, like a seagull?

We would likely find remains of marine animals such as fish, mollusks, and crustaceans. We might also find the remains of some land animals such as rodents.

Owls, hawks, and eagles are types of raptors (animals that have hooked beaks and sharp claws) and are therefore adapted for seizing prey animals. Hawks and eagles differ from owls in that they eat their prey animals by tearing them into small pieces, picking out the flesh and avoiding most of the fur and bones. They also have strong stomachs that can digest most of the bone material they might eat. The relatively small amount of indigestible bone and fur that remain will be compacted by their stomach muscles into a pellet similar to the owls. Do you think an eagle pellet would be as useful for dissecting as an owl's? Why or why not?

The eagle pellet likely wouldn't be as helpful as the owl pellet since there would be fewer whole items (e.g., feathers, bones) that we could use to identify what they ate.