Virtual Owl Pellet Dissection

Website: <http://www.kidwings.com/owlpellets/flash/v4/index.htm>

**INTRODUCTION**

Owl pellets are the undigested remains of prey ingested by an owl.  The owl swallows its prey whole, and during the process of digestion, the soft parts of the prey are dissolved and passed on to the intestine for absorption.  The hard, non-digestible parts-bones, teeth, fur, feathers, and chitonous remains of insects are compressed in the gizzard and passed on to the *proventriculus* where the pellet remains until it is expelled.  These pellets are not eliminated as feces, but are regurgitated through the mouth.

Pellets are not found exclusively within the owl families.  There are many species of birds known to regurgitate pellets; hawks, eagles, kites, harriers, falcons, and even robins are some of the more familiar ones.  Out of all types of pellet ejectors, the efficiency of the process is probably as high in owls as in any other bird.

The Common Barn Owl feeds in early morning and early evening and will usually produce one to two pellets per day.  Glossy black when fresh, the pellet remains smooth and dark in color when dry.  These pellets can provide valuable information pertaining to the diet of owls.  By studying the contents of owl pellets, one may discover seasonal, regional, and habitat differences and even differences in individual tastes between owls.  Also, pellets can be used to effectively illustrate the nature of food chains, to demonstrate the role of avian predators within the ecosystem, and to provide information about the presence and relative abundance of animals in a particular area.  As an educational tool, pellets can also be used to introduce students to skeletal anatomy and to teach others how to identify and animal by its skull and jawbones.

The pellets in this Pak are from one of the two owl families, Tytonidae or Strigidae.  Each pellet has been fumigated to eliminate the presence of any insects and then individually wrapped for preservation.  Unless otherwise stated, the pellets in this Pak are from the family Tytonidae and more specifically, the Common Barn Owl (*Tyto alba*).

**PURPOSE**

1.              To successfully extract prey bones from a barn owl pellet.

2.              To explain how pellets are made and how they can be used to do a prey study.

3.              To label and arrange bones on a chart.

4.              To explain the role of owls in a food web.

**SAFETY**

1. Demonstrate correct behavior while in the Computer Lab
2. No eating or drinking while in the Computer Lab

**PROCEDURE**

1. Open up Internet Explorer and go to this website <http://www.kidwings.com/owlpellets/flash/v4/index.htm>
2. Click on the pellet to remove the fur.  Fur will automatically move to a pile in the corner.
3. Click on the bones and drag them to the skeleton.  Match the bones correctly and they will snap in place.

**Note: Be sure to have your earphones so you can hear the name of the bones as you click on them**.

1. At any time you can click on the label button to turn the labels on or off.
2. When you have correctly matched you will have a chance to download a certificate that you can print.
3. **In order to get credit for your dissection, you must save your certificate and email it to me.**

**Student Answer Document**

**Name\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Date\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Class\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Answer the following questions from the introduction information.**

1. What are owl pellets?

1. What happens to the soft parts of the prey?

1. What is the purpose of the gizzard in the owl pellet formation?

1. Where does the pellet remain until it is expelled?

1. These pellets are not eliminated as \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, but are regurgitated through the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.
2. List 6 other birds that are known to regurgitate pellets.

1. Of all the birds that are pellet ejectors, which type of bird is probably the most efficient at this process?

1. How many pellets does the common barn owl produce per day?
2. What color are the pellets when fresh?
3. Describe the appearance of a dry owl pellet.

1. The pellets are from what owl family?
2. Why are the pellets fumigated?

1. How do food webs and food chains differ?
2. Why does the number of organisms decrease as you move up the pyramid level?
3. In terms of energy flow in an ecosystem, why is the amount of energy passed from one trophic level to the next so small?  Since we know energy cannot be destroyed, account for the loss of energy that occurs between the prey and the owl.
4. We know that about 50% of the energy in an organism is not digested by the consumer and is simply passed through as waste or feces.  Is the energy stored in the feces lost to the ecosystem?  Why or why not?