

# What Can I Eat With This Beak?

Birds &  
Migration  
Room

## Overview

Students role-play feeding birds, demonstrating the importance of specialization for biological diversity.

## Duration

30 minutes

## Grades

5-8

## Subject

Life Science

## Objectives

Students will:

- identify examples of physical adaptations, and how they enable animals to survive.
- explore the great diversity of birds.
- test the effectiveness of different bird beaks with a number of different foods and habitats.
- explain the relationship between adaptation and biological diversity.

## Vocabulary

Physical Adaptation, Habitat

## Materials

### Habitats

Grassland: straw-filled basket with ping pong or styrofoam balls (field rodents)

Pond: tray of water with floating green beads (algae)

Flower Meadow: several small glass jars filled with water (flowers and insects)

Mud Flat: solid foam with beads and pipe cleaners (shellfish, shrimp and worms)

Forest: board with holes drilled in it (tree trunk) and beads (insects)

### Food

- worms (pipe cleaners)
- bugs (beads)
- rodents (ping pong or styrofoam balls)

### Beaks

- tweezers (sandpiper, great blue heron)
- spoon/strainer/net (shoveler, mallard)
- eyedropper (hummingbird)
- tongs (great owl, peregrine falcon, hawk)

### Stomachs

- jars of various sizes
- stopwatch or hourglass
- pencils and paper
- measuring cup

## Essential Academic Learning

Requirements

Science 1.1, 1.3

Adapted from "What Can I Eat With This Beak?" *Ridgefield National Wildlife Refuge Raptor's Guide*

## Background

### Ask

"What do birds do every day of their lives?"

(They gather food! Most people buy dinner at a local supermarket. Imagine if we had to catch a mouse for dinner, or scoop up algae, or dig for worms.)

"Would we use our own two hands?"

(We might use shovels, nets, traps and other tools, in order to make food gathering a bit easier.)

"Do birds use tools?"

(Birds don't have to use tools! Birds are shaped to be expert food hunters and gatherers.)

### Read

"Picture a bird, any bird. Are you looking at that bird in your mind? It has a beak, wings and feet. What shape is the beak? What shape are the wings? What shape are the feet? Turn to a partner. Describe your bird to each other, in as much detail as you can."

### Ask

"OK, you've now described a bird to someone else, and they've described one to you. Were they different? Why aren't all birds shaped the same?"

(One reason is because they eat different food! Eating different foods allows great numbers of birds to live together in the same habitat. If all birds ate worms, for example, they would run out of worms pretty fast. Then they would be hungry.)

"This exercise is about physical bird adaptations - or the way their bodies are shaped. Do you know what a physical adaptation is?"

(If not, listen to this: Wolves have thick fur, so they can keep warm in very cold places. Wolf fur is a physical adaptation to the cold. Owls can see in the dark, so they can hunt at night. Their eyes are especially adapted to darkness. Sandpipers have long beaks, so they can poke way down in the mud for worms and clams. Their beaks are special physical adaptations for eating clams and worms. This activity is about the many types of beaks birds have adapted for different foods.)

## Directions

- 1) Observe the many different kinds of beaks in the bird beaks display.
- 2) The rest of the activity is to be conducted in the center room at the table next to the sink. Bring the box labeled "Habitats" and the box labeled "Beaks and Stomachs."
- 3) There are jars and utensils in the box labeled "Beaks and Stomachs." Each player can choose one utensil to use as a beak, and one jar to use as a stomach.
- 4) Station the five different habitats evenly around the table.
  - Fill the tray with water and dump in the green beads. This represents a pond environment with algae or duckweed.
  - Put all the foam balls in the basket with the grass. This represents a grassland with small mammals, like mice.
  - Fill the little glass jars with water. These are flowers full of nectar.
  - There is a piece of wood with holes drilled through it to represent a tree trunk. Make sure all the holes have beads in them - these are the insects.
  - The foam with pipe cleaners and beads represents a mud flat with worms, clams and shrimp.
- 5) Pass out a piece of paper and a pencil to each player.

## Activity Rules

Station a player at each habitat. If you have extra players, line up behind one habitat and wait to rotate in. Your job is to gather as much food in each habitat as you are able. Each person gets twenty seconds alone at each habitat. Your group leader will signal you when to start and when to stop. You can use only your "beak" to pick up food. Once you have picked up the food, you must drop it into your jar - your "stomach". You cannot scoop up food with your jar. When you are finished at one habitat, count the food or measure the liquid you have been able to gather. Write the number down on your piece of paper. Put all the food back. Move to the next habitat, and wait for your group leader to signal you to begin. Good Luck!

## Follow Up

Please record your answers:

- 1) Ask, "What kind of bird are you?" Write the type of beak you have at the top of your paper. Make a guess as to what type of bird you might be and write this down at the top of your paper too.
- 2) Ask, "In which habitat did you have the most success?" Number each habitat 1-5, one being most successful and five being least. Compare your results with other players.
- 3) Ask, "What are you best suited to eat? Why?" Compare your results with other players.
- 4) Ask, "How does it benefit birds to have different types of beaks?"