Birds

Bird Bills

Post-Visit Activity, 4+

Adapted from California Environmental Education Guide, 1988

Objective

Students will compare and analyze the adaptations of various bird beaks for food gathering.

Materials

- Pictures of birds
- Toothpicks (300)
- Pennies (300)
- Marbles or grapes (300)
- Plastic spoons (one per student for 1/3 of class)
- Scissors or tweezers (one per student for 1/3 of class)
- Chopsticks or popsicle sticks (one per student for 1/3 of class)
- Paper cup or funnel cup made from sheet of old paper (one per student)

Background

Animals have adaptations that allow them to obtain food, move, protect themselves and minimize the effects of extreme temperatures. One example of an adaptation can be found by looking at bird beaks. Beaks help birds obtain and eat food. The variety of shapes and sizes of beaks allow birds to consume different types of food.

Insect eaters: slender pincerlike beaks of varying lengths (swift, swallow, warbler)

Fish eaters: long, sharp beaks sometimes with hooked ends (cormorant, merganser)

Birds of prey: powerful, hooked beaks for tearing and cutting flesh (eagle, owl)

Seed, nut eaters: short, stout beaks for cracking seeds open (finch, sparrow)

Nectar feeders: long, slender beaks and tongues for reaching into flowers (hummingbird)

Preparation

Find an area of about 30 feet by 30 feet to conduct the activity. Lawns work best so the marbles don't roll. Collect bird pictures or have students collect pictures from old magazines. Prepare two class data sheets (see below) on the board.

Procedure

1. Display bird pictures and discuss ways that the birds are alike (feathers, lay eggs, etc.) and ways that they are different (color, size, body shape, beak and feet shape). Review the term "adaptation." Focus on one variation that the students described and ask how the variation might be an adaptation that helps that particular type of bird survive.

2. Tell students that bird beaks are adapted to the type of food they eat. Students will be learning how birds use their beaks. Divide the class into three groups and assign a different bird beak (spoons, scissors, chopsticks) to each group. Pass out the appropriate beaks. Give each student a cup to serve as their stomach.

3. Distribute one of the food items (marbles to represent seeds, toothpicks to represent worms, pennies to represent beetles) around the study area. Explain that students should pick up as many of the food items as possible using their "beaks" and then drop the items into their stomachs during the allotted time.

4. Give a signal to begin feeding and allow the round to proceed for a couple of minutes.

5. Gather students into their three groups, have them count and then record the total number of food items they collected (as a group).

6. Repeat steps 3 to 5 with the other two foods one at a time.

7. Discuss the results. Which bird beak was able to eat the most worms? Seeds? Beetles?

8. Repeat the study one final time distributing all types of food at the same time and record results on the second data sheet.

9. Discuss: If only one kind of food is available in a certain area, do you think you would find lots of different birds there? What happened when all the food items were available at once?

Data Sheets

One food at a time

Food item	Scissors Bird	Spoonbill Bird	Chopstick Bird
Toothpicks			
Marbles			
Pennies			

All foods at once

Food item	Scissors Bird	Spoonbill Bird	Chopstick Bird
Toothpicks			
Marbles			
Pennies			