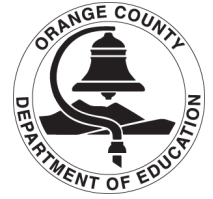




The Bird Beak Game Classroom Activity



Birds are a colorful and necessary part of our environment. Much can be learned from watching birds and studying their structure and behavior. Different birds are adapted to eat different types of food. Some birds will eat almost anything (e.g., the seagull). Other birds eat a very specialized diet, such as the pelican; it eats only fish. Different birds have specially adapted beaks to eat their food. The specially adapted beaks and diets allows many different species of birds to survive in the same area without having to compete for the same food source.

SYNOPSIS

Given an assortment of items that represent different types of bird beaks, students attempt to eat different kinds of food.

OBJECTIVES

Students will

- experience the limitations and benefits of bird adaptations for feeding in a classroom game.
- be introduced to the concept of ecosystem diversity.

NGSS CONCEPTS SUPPORTED

- 2-LS4-1. Make observations of plants and animals to compare the diversity of life in different habitats.
- 3-LS4-2. Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.
- 4-LS1-1. Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.

VOCABULARY

- adaptation
- endangered species
- migration

MATERIALS

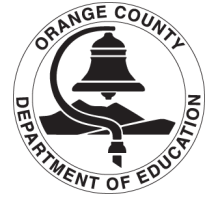
For every 16 students

- 16 paper cups
- 200 marbles
- 200 toothpicks
- 200 paperclips
- 4 clothespins (spring type)
- 4 pair chopsticks
- Bird Beak Data Sheet (on following page or in Student Notebook)
- Birds of the Bay (on following page or in Student Notebook)
- 4 spoons
- 4 tweezers



The Bird Beak Game

Classroom Activity (cont.)



PROCEDURE

1. Divide students into four groups: tweezer birds, spoonbill birds, clothespin birds, and chopstick birds. Give each student the appropriate beak and one cup.
2. Have students line up in the bird groups and kneel on the floor. Have them place the cups in front of them. Instruct them not to move from their assigned area.
3. Distribute one type of food item (marbles, paper clips, toothpicks) on the floor and signal the birds to start eating. The bird (student) must pick up the food item using its “beak” and drop the food item into the “stomach” (paper cup). Food items may not be scooped into the cup; the stomach must be held upright. Allow three minutes for the birds to eat, then tell the birds to stop and stand up.
4. Have each bird count the number of food items in its stomach. The results should be recorded on the bird activity sheet located in the student notebook.
5. Repeat the activity using the other food items. After each food item has been tested individually, test all three food items at the same time. Record and discuss the results.

NOTE: If possible, limit the group to 16 students at a time while others observe. Stop each test before the food supply runs too low or at the first sign of crowding, bumping, etc. Use your status as a predator to control behavior.

CHECK FOR UNDERSTANDING

The following suggestions may help initiate a class discussion:

- Why were some birds able to obtain certain types of food easily and others were not?
- Did any particular type of bird have difficulty obtaining food? Have them describe what would happen to a bird unable to get enough food.
- Are any birds adapted to eat particular kind of food? Have them describe the bird(s) and their adaptation(s).
- If a bird moved to a different “habitat”, how well would it survive?

EXTENSIONS

When introducing each food item, the concept of diversity may be introduced. With many types of food available, a large variety of birds are able to feed successfully. A diverse ecosystem can support a larger variety of organisms than a less diverse ecosystem. Diversity is an indicator of a healthy ecosystem.



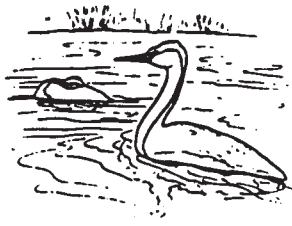
STUDENT NOTEBOOK PAGE

Bird Beak Data Sheet

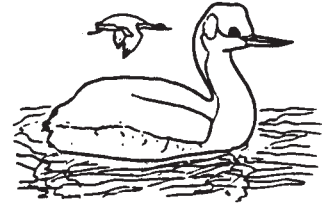


Food Items	Spoonbill Bird	Clothespin Bird	Chopstick Bird	Tweezer Bird
Toothpick Worms				
Marble Snails				
Paperclip Beetles				
Food Items "Feeding Frenzy" Distributed Simultaneously	Spoonbill Bird	Clothespin Bird	Chopstick Bird	Tweezer Bird
Toothpick Worms				
Marble Snails				
Paperclip Beetles				
TOTAL				

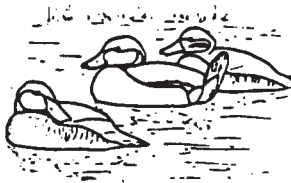
Birds of the Open Water



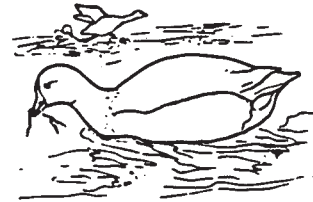
Western grebe



Eared grebe

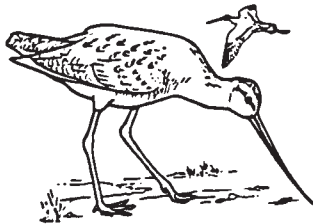


Ruddy duck

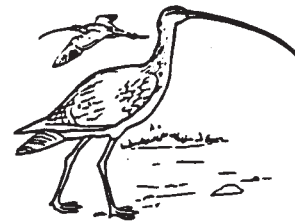


American coot

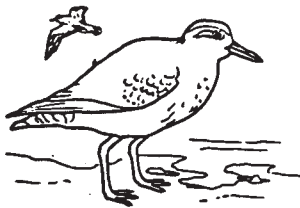
Birds of the Mudflats



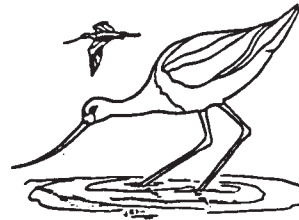
Marbled godwit



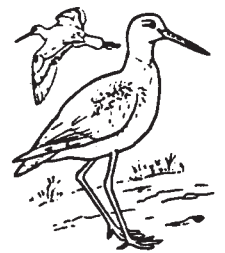
Long-billed curlew



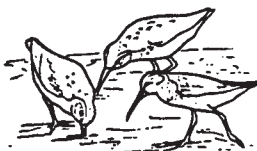
Black-bellied plover



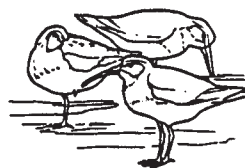
American avocet



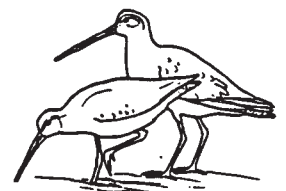
Willet



Least sandpiper

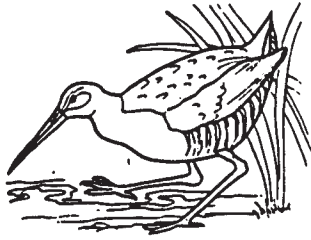


Dunlin

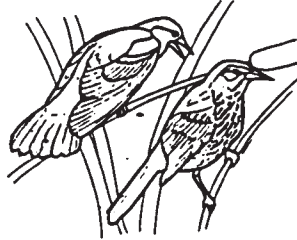


Dowitcher

Birds of the Marshes



Light-footed clapper rail



Red-winged blackbird



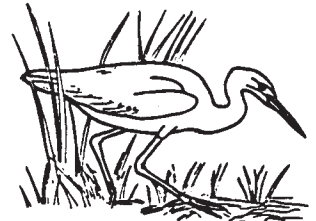
Savannah sparrow



Great blue heron

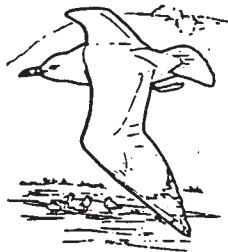


Common egret

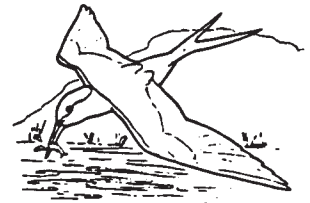


Snowy egret

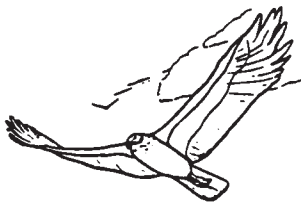
Birds of the Air



Ring-billed gull



Forster's tern



Turkey vulture



Red-tailed hawk