BEAKS FOR WHAT WE EAT

Students gather a variety of "foods" with different tools that represent bird beaks.

Arizona Science Standards

SC04-S4C4-01&02,
SC03-S4C4-01&03

Objectives

Students should:

- Identify vital prey/predator body parts and describe their functions.
- Identify physical and behavioral adaptations of predators and prey that allow them to survive.

Materials (continued on next page)

- A copy of *Student Handout - Beaks for What We Eat* for each student
- Two buckets or plastic basins half filled with water

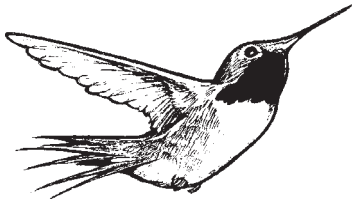
Getting Ready

Gather the materials as listed in the left margin of this page. Adjust the numbers of tools and food to meet your group's needs. Each student should have one tool to work with, and there should be enough food items available for children to each gather a small pile with her/his tools. You can do this activity indoors on a cleared floor space or outside on a cement, dirt, or grassy surface.

Doing the Activity

Setting The Stage

1) Ask the children if they can think of some examples of the kinds of foods birds eat. Write them on the board as students list them. As a group, compare the items on the list, asking how the foods are similar to each other or different.
2) Have the students give examples of birds that might eat the foods mentioned. From two diverse examples, i.e. hummingbirds and hawks, ask, "Do you think the hummingbird's beak and the hawk's beak are similar in shape or different from each other?" They may know that these two birds have different beaks. Encourage them to describe why this may be (because they eat very different kinds of food.)
3) Explain that later they will get to work on a handout that has specific illustrations of different kinds of bird's beaks, but that first they are going to experiment with different tool "beaks" to see how they are best suited for gathering different kinds of food.



Beaks For What We Eat (Part 1)

1) Assemble the group in a circle around the activity area. Place the buckets of water in the center of the area. Scatter the "food" items on the ground around the buckets, and be sure to put some food in the buckets as well.
2) Pass out a tool to each student, explaining that these are their "beaks" and that when you say "Go" they need to pick up as much food as they can with their "beaks" and form their own pile of food on the perimeter of the activity area. Remind them that they can only use the tool itself to pick up the food (no scooping food with one hand into the strainer, for example!) Encourage them to try their "beaks" with all types of "food" and to gather from both the water and the ground.
3) After they have accumulated a pile of food, have each student sit down behind their pile, facing inside the circle. Discuss the activity as a group.

Discussion (Part 1)

1) Look at the food piles and associated tools and ask the students to demonstrate their tools and the types of foods they gathered. Ask questions such as:
   - What shape and size of beak did you have?
   - What kind of food could you gather easily?
   - Which foods were the most difficult to grab?
2) Generate the awareness that certain beaks work best for certain kinds of food. Ask: "What kind of beak is best for grabbing small, wiggly objects like rubber bands?" (a narrow, pinching beak like tweezers or needle nosed pliers) "What kind of beak is good for

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MATERIALS CONT'D

Tools

4-6 of each of the following implements:

- nutcrackers
- pliers
- needle nosed pliers
- tweezers
- straws
- narrow-tipped screw drivers (for spearing objects)
- scoops or strainers

Foods

A few handfuls of each of the following items:

- toothpicks
- marbles
- pinto beans
- washers
- rubber bands
- macaroni
- rice
- popped popcorn

VOCABULARY

Adaptation

gathering objects floating in the water?" (a strainer) "What kind of beak would be good for crushing large seeds and nuts?" (pliers, nutcrackers), etc. Clean up the area and return to the classroom to do *Student Handout - Beaks for What We Eat*.

BEAKS FOR WHAT WE EAT (PART 2)

1) Pass out a copy of *Student Handout - Beaks for What We Eat* to each student. Have the students cut out the cards and arrange them into five rows each containing the bird, the type of food it eats, and the tool that most represents the action of its beak.
2) Remind the students to look carefully at the shape of the beak and compare it to the foods to determine which bird eats which food. Discuss their answers as a group.

DISCUSSION (PART 2)

1) Ask the students to describe the beaks of each bird. How are the beaks' shapes and sizes suited for their food? How do they use them to gather their food?
2) Ask the students if they know which of the birds are predators. (Hawks, woodpeckers, and wrens are predators.)
3) What do the other birds eat? (Cardinals are seed-eaters, and humminbirds drink flower nectar.)
4) Do they think any of the birds are prey animals? (Many of these birds could fall prey to larger predators. Even hawks need to protect their young from predators like owls while they are still in the nest. Predatory birds will eat insect, seed, and nectar-eating birds, as will snakes, raccoons, coyotes, and other predators. House cats are significant predators of wild birds, preying upon them in yards and at feeders. Suggest to students with outdoor cats that putting a bell on their collars help reduce their predation on birds.)
5) Do predator's beaks have anything in common? How about prey? (Predators' beaks are often sharp and/or curved for tearing up and crushing prey. Birds that may be prey have a variety of beak shapes depending on their diet.)
6) Explain that predators and prey have very different **adaptations** for the way they find food.

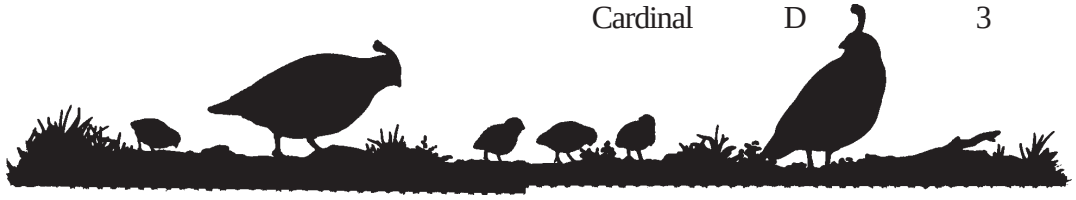
EXTENSION

Have the students research a species of Sonoran Desert bird. Have them illustrate and write a description of its diet, beak shape, and other natural history pertinent to predators/prey.

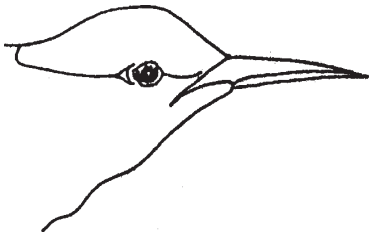
ANSWER KEY

The cards should be organized as follows (refer to the numbers and letters in the bottom left corner of the food and tool cards):

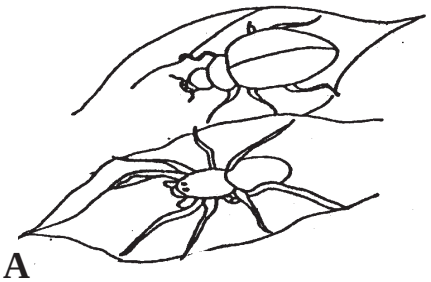
Bird	Food	Tool
Hummingbird	E	4
Woodpecker	C	5
Wren	A	2
Hawk	B	1
Cardinal	D	3



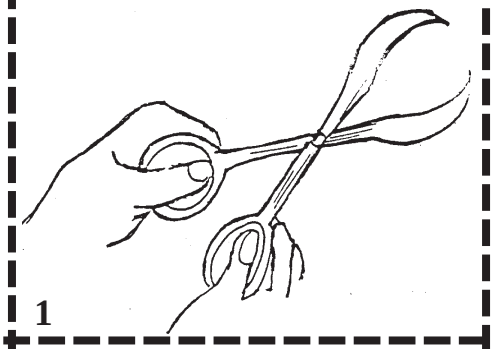
STUDENT HANDOUT - BEAKS FOR WHAT WE EAT



HUMMINGBIRD



A



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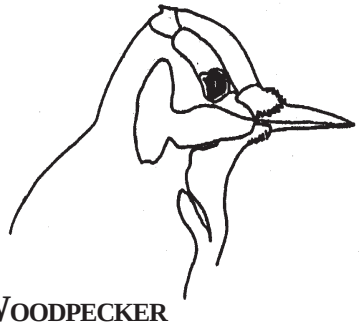
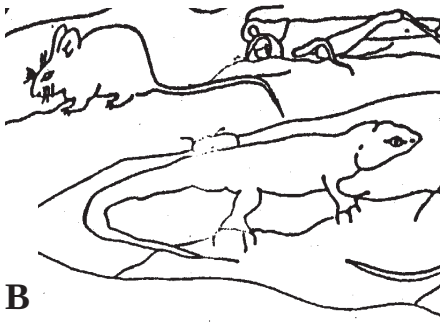


WOODPECKER



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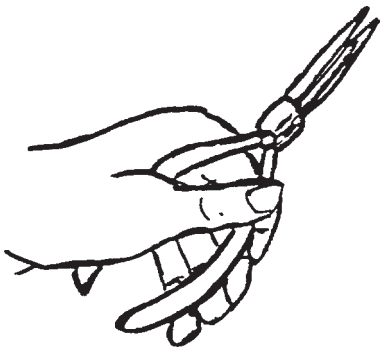

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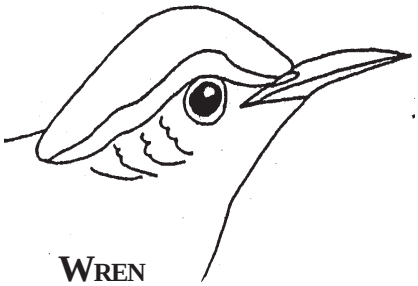
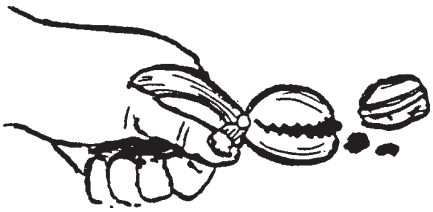


WREN

C



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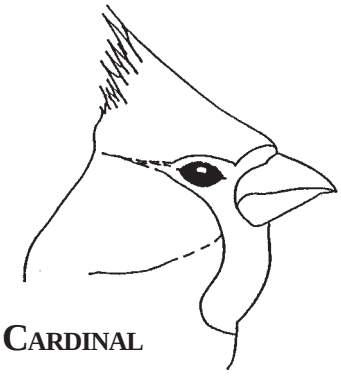
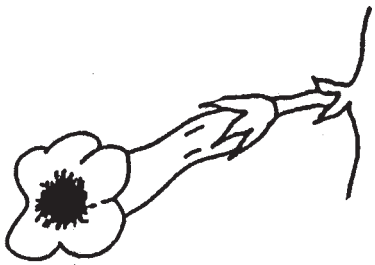
HAWK

D

4



CARDINAL



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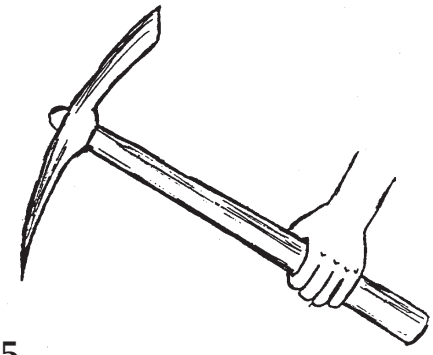

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