



Bird Beak Adaptations

Time: 60 min

Location: indoors or outdoors

Materials:

Plastic spoons (1/3 of class #)

Chopsticks (1/3 of class #)

Tweezers (1/3 of class #)

Marbles (50 or so)

Pennies (50 or so)

Toothpicks (50 or so)

Next Generation Science Standards:

Cross-cutting concepts: Patterns; Structure & Function

Science & Engineering Practices: Asking questions; Constructing Explanations

Disciplinary Core Ideas: LS3: Heredity: Inheritance and variation of traits; LS4: Biological evolution: Unity & Diversity

- Click through this website with students to look at different bird beaks: [Bird Adaptations: Beaks](http://www.vtaide.com/png/bird-adaptations3.htm). (<http://www.vtaide.com/png/bird-adaptations3.htm>)
- Discuss what features of the beaks a might make them suitable for the activities listed.
- Then tell students that they will try to test out different models of bird beaks to see which are most effective in picking up different types of food sources.
- In this activity, students pretend to be birds by using the "beaks" (spoons, chopsticks, or tweezers) to eat the "food" (glass marbles, pennies, or toothpicks).
- Distribute the "Choosing Your Food Wisely" student sheets. Students should use the materials and follow the instructions provided.

- Tell students that in this activity they are to pretend that they are birds. Students will each have one beak type (which they must keep throughout the activity) and a cup (to represent the bird's stomach) and will attempt to pick up various types of food at timed intervals. Emphasize that they can use only that beak for eating. They should hold the beak in one hand and the stomach (plastic cup) in the other hand. When done, they will make a graph that will show how much of each kind of food each beak type can pick up.
- Place the first food item (glass marbles) in the middle of a feeding area you have set up (i.e., the middle of a circle created by students).
- Tell students that when you say "Go," they should feed for 1-2 minutes or until all the food is gone.
- Students should then empty their cups and count the contents.
- They should then record the amount on their Bird Beaks Record Sheet.
- Repeat this activity for the other types of food (pennies and toothpicks).
- After students have recorded the results, ask each student to provide you with the total amount of food collected by each beak, which you can record on a grid on the blackboard.
- Add up all the student totals for each beak type and then ask students to make a bar graph using these totals. There should be a different color bar for each type of food. The three different bird beaks should be displayed on the X axis, with the amount of food on the Y axis (see the sample bar chart on the student sheet).

Discuss the results by asking these questions:

- Which beak collected the most of which food item?
- What do you think would happen to your bird if only one food item was available?
- Which of the beak types feed most successfully on which food item?
- Was one beak type successful with more than one food item?
- Did your earlier observations about beak types help you to understand how birds feed side by side but utilize different food items?

If there's extra time (or as a teacher extension), you can have students predict some places (or habitats) in which birds with particular beak types could survive. Then they could research actual birds with beaks that resemble those modeled in the activity, and check to see if their predictions were consistent with the research.

Name: _____

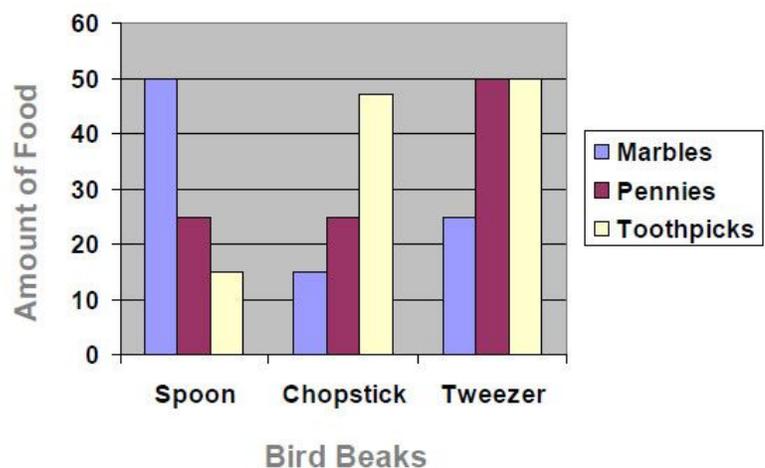
CHOOSING YOUR FOOD WISELY

Pretend you are a bird. You can use only the “beak” you select (spoon, chopstick, or tweezer) to “eat” the food (glass marbles, pennies, or toothpicks) provided by your teacher by placing the food into your “stomach” (plastic cup).

Activity:

1. Select a beak from the objects provided by your teacher.
2. Get one plastic cup. This cup represents your stomach.
3. Hold your beak in one hand and your stomach in the other.
4. When your teacher tells you, use your beak to pick up “food” (glass marbles) and place them in your stomach.
5. When your teacher says “Stop,” empty your “stomach” (cup) and count the number of items that were in it. Record this amount on the Bird Beaks Record Sheet.
6. This activity will be repeated for each of the other types of food (pennies and toothpicks).
7. When done, be sure you have completed the record sheet with your totals.
8. When asked, provide your data to your teacher, who will record the data on a class grid.
9. Using the data that has been recorded on the class grid, create a bar graph that shows the

class totals for each beak and food type. The three different bird beaks should be on the X axis and the amount of food collected should be on the Y axis. There should be a different color bar for each type of food (see the sample bar graph).



Bird Beaks Record Sheet

	Glass Marbles	Pennies	Toothpicks	Total Food Collected
Spoon				
Chopstick				
Tweezer				



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