



Fill the Bill

ALABAMA OUTDOOR CLASSROOM ACTIVITY

Grade Levels

3-8

Overview

Students participate in eight activity stations that demonstrate how different types of beaks help birds eat specific types of food.

Subject Areas

Science, Art, Math

Duration

Prep: 15 minutes

Activity: 30 minutes

Learning Objectives

Students will describe different types of beaks and explain how each is adapted to feed on different foods.

Alabama Course of Study Objective Correlations for Science

Third: 3, 5, & 8

Fourth: 5 & 6

Fifth: 8 & 9

Seventh: 1, 5, 6, 7, & 8

Materials

- Fill the Bill worksheets (copies)
- 3 eyedroppers or straws
- 4 pairs of chopsticks
- 3 pliers (or nutcrackers)
- 2 large scoops (or slotted spoons)
- 3 strainers
- 3 envelopes (or small fishnets)
- 3 forceps (or tweezers)
- 3 tongs
- small log or piece of wood
- popcorn or tiny marshmallows
- rice & puffed rice
- 2 aquariums (or large bowls)
- fake worms (or grapes)
- oatmeal
- stemmed cherries (or cotton balls)
- tall, thin vase
- large saucepan
- walnuts (or other nuts)
- Styrofoam chunks
- String

Adapted from Ranger Rick's
Nature Scope: Birds, Birds, Birds!

Background Info

It would be impossible for a hummingbird to gobble up a mouse. And it would be just as impossible for a hawk to slurp up some nectar from a flower. Each type of bird has a special beak and tongue adapted to eating a certain type of food. In this demonstration your group can find out which beaks are best for tearing, scooping, cracking, and picking by going to different stations you've set up and trying to find out which "tools" go with which types of "food."

Talk about different bird beaks to get the kids thinking about how beaks help birds survive. Here are some examples of birds and beaks you can talk about:

Hummingbirds have long hollow beaks that they use to probe flowers for nectar. The beak protects the tongue which slurps up the nectar.

Curlew, godwits, kiwis and snipes have very long beaks that they use to probe for worms, crustaceans, and other small creatures in mud and water.

Cardinals, sparrows, grosbeaks, and other finchlike birds have very short, conical beaks. The beaks are very strong and can break even tough seeds.

Spoonbills and pelicans have long, flattened or pouchlike beaks that they use to scoop up fish and other aquatic creatures.

Flamingos and some ducks have bills that act like strainers to filter tiny plants and animals from the water. (Only certain kinds of ducks are filter feeders.)

Nighthawks, whip-poor-wills, swifts, and swallows have large, gaping mouths that act like nets to trap insects. These birds catch insects on the wing.

Warblers have small, sharp, pointed beaks for eating insects from leaves, twigs & logs.

Toucans have very long, thick beaks for reaching out and plucking fruit from trees.

Preparation

You'll need to set up eight different stations, each with a special type of "food" that fits one of the eight different types of beaks we've described. And at each station you will need three different tools—one that fits the food and two that don't fit as well. Also, have a sign at each station that tells what type of food is represented. For example, have a sign that says "nectar" at Station #1, one that says "worms in the mud" at Station #2, and so on. Here's a list of food and tools for each station (the * indicates the tool that best fits the food).

Station #1: Water in a tall, thin vase to represent nectar in a flower. (hummingbirds). Tools include eyedropper or straw*, envelope or small fishnet, and large scoop or slotted spoon.

Station #2: Large saucepan filled with dry oatmeal and fake worms (or grapes) on the bottom to represent worms buried in the mud. (curlews, godwits, kiwis, & snipes) Tools include chopsticks*, nutcracker or pliers, and strainer.

Station #3: Whole walnuts or other nuts to represent seeds with hard coverings. (sparrows, cardinals, grosbeaks, & other finchlike birds) Tools include nutcracker or pliers*, tongs, and chopsticks.

Station #4: Styrofoam chunks floating in an aquarium filled with water to represent fish and other aquatic animals. (spoonbills & pelicans) Tools include large scoop or slotted spoon*, eyedropper or straw, and chopsticks.

Station #5: Puffed rice in an aquarium filled with water to represent tiny aquatic plants and animals. (flamingos & some ducks) Tools include strainer*, forceps or tweezers, and tongs.



Fill the Bill

ALABAMA OUTDOOR CLASSROOM ACTIVITY

Grade Levels

3-8

Alabama Course of Study Objective Correlations for Science

Third: 3, 5, & 8

Fourth: 5 & 6

Fifth: 8 & 9

Seventh: 1, 5, 6, 7, & 8

Outdoor Classroom Connections

Observe birds and their different types of beaks in your outdoor classroom's songbird habitat.

Literature Connections

⇒ *Bird* (DK Eyewitness) by David Burnie (ISBN: 10-0756606578)

Bird Field Guides

⇒ *National Audubon Society Field Guide to Southeast United States* (ISBN-10: 0679446834)

⇒ *The Sibley Field Guide to Birds of Eastern North America* by David Allen Sibley (ISBN: 067945120X)

⇒ *Birds of Alabama Field Guide* by Stan Tekiela *with Birds of Alabama Audio CD* (ISBN: 1591931517)

Project Learning Tree

⇒ *Charting Diversity*

⇒ *Planet Diversity*

Project WILD

⇒ *Which Niche*

Flying WILD

⇒ *Fill the Bill*

⇒ *Bird Buffet*

Discovering Alabama Videos

⇒ *Red-cockaded Woodpecker*

Page 2 of 3

Preparation continued...

Station #6: Popcorn or tiny marshmallows tossed in the air (which must be caught while in the air) to represent flying insects. (nighthawks & whip-poor-wills) Tools include envelope or small fishnet*, forceps or tweezers, and chopsticks.

Station #7: Rice spread on a log to represent caterpillars and other insects. (warblers) Tools include forceps or tweezers*, envelope or small fishnet, and nut-cracker or pliers.

Station #8: Cherries hanging from a string to represent fruit hanging from a branch. (toucans) Tools include tongs*, eyedropper or straw, and strainer.

Procedure

1. Pass out a copy of the Fill the Bill worksheet to each student.
2. Divide the class into eight teams and start each team at a different station.
3. Explain that there will be three different tools at each station, each of which represents a different type of bird beak function. Each group must decide which tool would most efficiently get the food at each station by trying out each tool. Once they pick the best tool, they should write the name of the tool on their worksheet in the appropriate square. (You might want to set a time limit for each station to keep the teams moving.)
4. Underneath the squares are pictures of different birds and their beaks. On the line under each picture, they should write the number of the square that represents the correct beak. For example, they should write "8" on the line under the toucan.

Assessment

- ▶ Review answers on worksheet.
- ▶ Discuss beak adaptations in general. Explain that many birds, after millions and millions of generations, have evolved very specialized beaks (beaks that can eat only one certain type of food). Ask the group how specialized beaks can help some birds stay alive. (A bird with a specialized beak can often eat a type of food that no other bird can eat.) Then ask how a specialized beak might hurt a bird. (If the bird's habitat changes and its food is no longer available, the bird might die because it can't eat anything else.) Explain that some birds, such as crows, have very versatile beaks which allow them to eat fruits, nuts, berries, dead animals, and even fish and small rodents.

Extension

Discuss the different foods (such as seed, suet, etc in your bird feeders) found in your outdoor classroom's bird habitat, the types of birds that eat those foods, and the types of beaks those birds have.

The Alabama Outdoor Classroom Program is a partnership between:



Alabama Cooperative
Extension System



Alabama Wildlife Federation

www.alabamawildlife.org/classrooms/



Alabama Department of
Conservation & Natural Resources

Bird Watcher's Name: _____

Please write the name of the tool that works best at each station:

Station #1: _____

Station #5: _____

Station #2: _____

Station #6: _____

Station #3: _____

Station #7: _____

Station #4: _____

Station #8: _____

Please note which station best represents the birds below:



Common Snipe: _____



Hummingbird: _____



Toucan: _____



Yellow Warbler: _____



Brown Pelican: _____



Northern Shoveler: _____



Northern Cardinal: _____



Whip-poor-will: _____