

Fill the Bill

6 Station signs

30 Fill the Bill student worksheets

9 Bird photos and descriptions

Station 1 food: 4 plastic cups

Station 1 beaks: 3 droppers, 3 plastic cups, 2 spoons

Station 2 food: 4 cups, sand with beads and rubberbands

Station 2 beaks: 3 hair clips, 3 paper cups, 2 spoons

Station 3 food: computer keys

Station 3 beaks: 3 wide clips, 3 hair clips, 3 droppers

Station 4 food: red pen caps, plastic bin

Station 4 beaks: 3 droppers, 3 hair clips, 2 spoons

Station 5 food: purple pen caps

Station 5 beaks: 3 paper cups, 3 tweezers, 3 wide clips

Station 6 food: Peas and plastic bits, flat plastic pan

Station 6 beaks: 3 tweezers, 3 paper cups, 3 wide clips

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Guiding Questions

Brainstorm different kinds of birds the students know. Then discuss what types of foods they eat. What do birds use beaks for besides eating?

Content

Bird beaks are multi-functional tools. Birds use them to weave nests, defend their territory, attack competitors, groom feathers, communicate, and most significantly, to gather or capture food.

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 and trying to find out which “tools” go with which types of “food.”

Species are adapted to the environment where they live. That’s partly why protecting habitats is so important – a species is perfectly adapted only to its own habitat components: food, water, cover, and places to raise young.

Set Up

Use the chart on the back of this page to set out the correct materials at each station with a station sign. There are enough tools to have up to 8 students in each group.

Activity

Tell students that they will be broken into six groups that will rotate to six stations. At each station, they will find three different tools which represent three different types of bird beaks. Use these beaks to catch the food provided. Hand out the Fill the Bill worksheets to each student and ask them to write down which tool works best at each station.

Once students visit all the stations, have them share their answers. Ask why certain tools worked better than others.

Station	Bird	Food	Tool	Student Instructions
1	Hummingbird - long hollow beaks to probe flowers for nectar.	Water in the bottom of plastic cups	Dropper , paper cup, spoon	Which beak collects nectar from the cup the best?
2	Shorebirds (curlews, godwits, kiwis, snipes) - long beaks to probe the mud/water for worms, crustaceans, and small insects.	Rubberbands and beads in cups of sand	Hair clips , spoon, paper cup	Which beak picks up worms and crustaceans from deep in the sand best?
3	Cardinals, sparrows, grosbeaks, and finch-like birds - strong beaks to beak seeds.	Computer keys	Wide clips , dropper, hair clips	Which beak would be best at picking up and cracking open nuts?
4	Pelicans, spoonbills - long flat or pouchlike beaks to scoop up fish and aquatic creatures.	Red pen caps floating in shallow water	Spoon , dropper, hair clips	Which beak is best at catching the most fish?
5	Nighthawks, whip-poor-wills, swifts, swallows - have large mouths to trap insects while flying.	Purple pen caps tossed in the air	Paper cup , tweezers, wide clips	Toss an "insect" into the air. Which beak is best at catching flying insects?
6	Warblers - have small, sharp beaks for picking insects from leaves and branches.	Peas and plastic bits on a plastic pan	Tweezers , paper cup, wide clips	Which beak is best at picking up small insects?

Tools listed in **bold** are the correct tool for that station.

Discussion

Discuss beak adaptations in general. Explain that many birds, after millions and millions of generations, have evolved very specialized beaks. Show the class the bird photos and 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.) A crossbill has a very specialized beak allowing it to only eat seeds in cones from coniferous trees like pine cones which other birds cannot break into easily. 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.

Have students fill in the rest of the Fill the Bill worksheet.