# Bird Beaks

***Grade Level***

Grades 5

***Objectives***

This activity is designed to start your at-home student in recognizing themselves as scientists and in thinking critically about problem solving. The goal is to teach concepts through discovery and to encourage using scientific thought processes. Feel free to adapt the lesson provided to better suit your student's abilities. Take these ideas, make them your own, and your student will have a greater chance of success.

***Procedures***

1. Ask your at-home student to reflect on what they have learned about the structures and functions of ecosystems. Remind them that organisms within ecosystems are connected. Each organism plays a role.
2. Ask your student to share some ideas of how birds might play a role in ecosystems based the different types of food they eat. Think about how birds have different types of beaks based on what they eat. What birds eat also explain why birds migrate depending on what food is available during each season. If possible, have your student observe native birds in your backyard or other local outdoor spaces to see what the birds are eating and how their beaks are shaped.
3. Explain that some kitchen utensils can resemble and perform the same actions that bird beaks can perform. Have your student think of some kitchen utensils and what their functions are. Some of these utensils may be found in your home. Help your student to gather these utensils and study them. Have your student draw what the utensil looks like and record what that utensil is used for. Ask your student:
    a. What types of bird beaks may be similar to these kitchen utensils?
    b. What type of food would a bird eat if it had a beak similar to each kitchen utensil?
4. Next, have the student discuss the different types of foods that birds consume and how that affects the ecosystem. Your student can think about birds they may find in many types of ecosystems, including jungles, forests, grasslands, deserts, lakes, coastal areas, or even cities. Some examples of ecosystem roles may include pollination, rodent control, insect control, and seed dispersal.

a. Pollination: Pollen is a yellow, powdery substance made by flowers. For plants to create seeds, pollen needs to be transferred from one flower to a different flower. Pollinators such as butterflies eat nectar found in flowers. When they eat nectar, they also pick up pollen. The pollen is transferred to the next flower they get nectar from. The plant can then create the seeds needed to make new plants. One example of a bird that is a pollinator is a hummingbird.
b. Insect and rodent control: Insects and rodents reproduce quickly. They can affect the ecosystem by eating a lot of plants. They can also spread disease. Animals that eat insects and rodents help control their populations which can limit the spread of disease and protect vegetation. Examples of birds that control insect populations are swallows. Examples of birds that control rodent populations are hawks
c. Seed dispersal: New plants can only grow where their seeds land. Some plants, like dandelions, have special adaptations that allow the seeds to travel to new places on the wind. Other plants, like blackberries, encase their seeds in fruit. When an animal eats the fruit, they also eat the seeds. The seeds are then pooped out in a new location where they can then grow. An example of a bird that helps with seed dispersal is an American Robin.

***Optional: Bird Beak Game***

5. Allow your student to play the Bird Beak Game with the supervision of an adult. In this game, they can test out different types of "beaks" to find out more about how a bird's beak influences what they eat. Some items may or may not be readily available in your house.
    a. What is needed for beaks: chopsticks, spoons, forks, tongs, tweezers, spring action clothes pins.
    b. What is needed for food (a few of each): dried beans, pasta, marshmallows, gummy worms, rubber bands, any other small items they might have around their kitchen or house.
6. Set up "food" items on a flat surface and try to make a prediction about which beaks will work best to pick up different foods.
7. Try out each beak- which foods are easier to pick up and which foods are harder to pick up? (Make sure you're only using the beak and not your fingers to pick up food!)
8. Your at-home student can be a scientist and record their observations.
9. As an extension, and with adult supervision, other kitchen items can be observed by the at home student or demonstrated by an adult. Items include nutcracker with nuts, sifter with items in water, reusable straw with nectar juice, shears, ice pick)

| **Type of Bird** | **Utensil** | **Function** |
|---|---|---|
| Parrot | Nutcracker | cracker |
| Cardinal | Nutcracker | cracker |
| Spoonbill | Spoon | spooning |
| Flamingo or Duck | Sifter | strainer |

| | | |
|---|---|---|
| Hummingbird | Straw | probe |
| Stork | Chopsticks | tweezer |
| Toucan | Tongs | Tossing |
| Woodpecker | Ice Pick | chisel |
| Warblers | Tweezers | tweezer |
| Hawks and Owls | Shears | shredder |

***Standards***

| **Ohio Academic Content Standards** |
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| Grade 5 Life Science Topic: Interconnections Within Ecosystems<br>Organisms perform a variety of roles in an ecosystem. |