WOW Program Lesson Plan

Habitats & Beaks

Program Duration:
10-15 minutes

Recommended Grade Levels:
Grades 2nd and up

Materials Needed:
- Plastic cups (for "stomachs")
- Bowls/plastic containers to hold certain habitats

- Habitats:
Lake/Ocean Habitat: water
Grassy Habitat: green material/felt and black felt (or outside on grass/soil)
Garden/Flower Habitat: plastic cup with sugar water
Grassland Habitat: Carpet or beige/tan blanket
Tree cavity/Forest Habitat: Toilet paper tube cut in half by the width of the tube

- Beaks: spoons, toothpicks (wrapped together with a rubber band), drinking straw, Popsicle sticks glued together (or wrapped with a rubber band), chip clip, binder clip

- "Food": cut up rubber bands (worms), cut up pipe cleaner or rotini pasta (bugs), cut up string (other worm alternative), sunflower seeds, Swedish Fish candies (or Goldfish, though they do not hold up well in the water habitat), sugar water (nectar), Tic Tacs (bugs)

Ohio Learning Standards Met
2- Interactions within Habitats, 3- Behavior, Growth, and Changes, 4- Earth's Living History, 5- Interactions within Ecosystems

Learning Objectives
1. Students will be able to identify what makes birds unique, specifically focusing on bird beaks.
2. Students will be able to discuss how habitat not only influences what a bird eats, but also how well adapted their beaks are to their food/environment

Preparation
- Find photos of birds with different beak shapes (check out www.allaboutbirds.org for examples)
- Discuss how birds eat and what they eat
- Discuss habitats that birds live in
- This can also be done outside on the grass/pavement for other habitat options
- Use any alternatives and be creative regarding supplies

Background
Birds live all across the world, including in grasslands, forests, wetlands, and our own backyards. Do all these birds that live in different areas all look and act the same? In fact, each bird is fit for its habitat in special ways. This is especially true for beak design and how birds gather their food. Find out how different beaks help birds put food in their stomachs!

Activity
1. Have students pick their desired beak. Explain the beaks and the birds with which they correspond.
2. Set up the habitat and explain what each material in the habitat represents.
    a. For grassy habitat, cut sting into 3-inch pieces, and cut rubber bands, and bury in dirt/on top of black felt. Place the grass/green felt and sunflower seeds randomly on the grass/felt

b. For the forest habitat, place the pasta and pipe cleaners in the tree stump/toilet paper roll
c. For the lake/ocean habitat, fill the clear bins with water and place Swedish fish in the water
d. For the garden habitat, fill the plastic cup with sugar water
e. For the grassland habitat, work on the carpet or blanket and add tic tacs and pasta

3. Allow students 30 seconds to pick as many food items as possible and place them in their "stomachs". Make sure they are only using the beak to pick up the food and not their hands!
4. Once the time has ended, have each student examine their "stomachs" to determine how much food they were able to grab with their beak and if they grabbed anything else from the habitat.
5. Discuss the success of each beak in the specific habitat and why or why not it worked.
6. Switch habitats and repeat 2 through 5.
7. After the experiment, show the students the pictures of the birds and the food they actually eat in the wild to connect the representations used to real birds in the wild.

Questions

1. Did all beaks work for all of the habitats?
2. Which beaks worked best for which habitats?
3. Thinking of the size of a bird's stomach, how would they eat the food they gather? Quickly and all at once? Or slowly and over a longer period of time?
4. What else about a bird is special for the habitat it lives in?

Summary

Every bird has a specialized beak that is designed for the environment it lives in. These specialized beaks help the birds catch or gather their food, which is also different in the various environments. Birds that search for worms in the soil, such as robins, have skinny pointed beaks to sift through the dirt and grab onto the worms. Birds such as cardinals or finches that search for foods in grasslands have short, cone-shaped beaks to pick up seeds in the grasses. Woodpeckers, which live in the forest, have long, skinny, and pointed beaks that can reach into tight places and catch insects. Blue herons and egrets have long, spear-like beaks that can grab onto and hold tight to the fish they catch in lakes. In gardens, hummingbirds use their straw-like beaks to suck up the sugar found in flowers. Finally, spoonbills, which reside in marshes, use their spoonbill beaks to swing back and forth in the water and catch small fish and insects.

Extended Exploration

- All habitats can be completed along with any new additions. Be creative with any supplies on hand!
- Have students create a small report on a specific bird of choice focusing on what the bird eats, bird's habitat, and bird's beak type.
- Cornell Lab K12 Education provides guides for further bird activities at https://www.birds.cornell.edu/k12/
- Watch https://www.youtube.com/watch?v=lFZ8NMBDCJw to learn more about bird beaks and feeding adaptations