

Bird Adaptation: Beaks and Bills

Duration: 1 or more class periods (with outdoor option)

Objectives:

Students will:

- 1) Understand that birds living in different habitats have different kinds of beaks and feet in order to survive in their environment
- 2) Describe the advantages of various bird beak adaptations
- 3) Make field observations of birds

Background:

All animals are adapted to the habitats in which they live. Birds are among the animals more easily seen in the city, and around school grounds. Since birds are abundant in almost all ecosystems of the world, they are great examples of the variety of adaptations and behaviors that occur in response to different environments. Two of the most obvious characteristics of birds that show their adaptations are their beaks and their feet, and this activity will focus on observations of the various beak adaptations of different birds.

Materials

Kit: Pictures of common birds; drawings of different kinds of bird beaks and feet; utensils - one of each: straw, small net, strainer, nutcracker, tweezers, chopsticks (this kit can be found at the VN Center at Walden Ponds in the bird activity crate).

Procedure

1. Begin by showing pictures of common and well known birds (mallard duck, goose, magpie, robin, house sparrow, house finch, bald eagle, great blue heron, great horned owl, flicker, etc.). Let students guess, if they know what any of the birds are.
2. Discuss some characteristics all birds have in common. All birds have wings, their body is covered with feathers, have beaks, walk on 2 legs, lay eggs, have hollow bones.

3. Explain that birds live in such a variety of habitats, they have developed specific physical characteristics (adaptations) to help them survive in their surroundings. Using the pictures for comparison, ask the students if they can pick out different physical features between birds. Discuss various adaptations – for instance, ask the students why birds of prey have different beaks and feet than ducks or sparrows.
4. Explain that birds that eat different foods have different kinds of beaks that are specially adapted to the purpose they serve. Discuss how birds living in different habitats such as ponds, have different feet and beaks than birds living in the forest or on the grasslands, because they have to do different things. Show the drawing of beaks and feet as an example. Explain that all those features are examples of adaptations, that make the birds better fit to survive in their habitats.
5. Direct the students to a table where you have previously placed the following items and pictures in random fashion:
 - straw, tongs, small net, strainer, nutcracker, pair of chopsticks, tweezers
 - pictures of humming bird, great blue heron, white pelican, mallard duck, killdeer, Say's phoebe (flycatcher), house finch

Ask the students to look at the shape of the birds' beaks and try and match the birds to the utensils. The matches are:

straw-humming bird: pointed and thin beak to suck nectar from flowers

tongs-heron: long beak to catch fish and frogs under water

small net-pelican: large, capacious beak that scoops up water and fish; the water is drained out, the fish kept

strainer-duck and goose (mallard duck): flat, barbed beaks to take mouthfuls of water and vegetation, and strain the water out

nutcracker-sparrows and finches (house finch): conic-shaped beaks to crack open nuts and seeds

chopsticks-shorebirds (killdeer): thin long beaks to pick worms, shrimps, insects from water

tweezers-warbler and flycatcher (Say's phoebe): thin beaks to pick up insects from logs or from the ground.

6. If possible, take students outside to the schoolyard, or a nearby park to explore and look for birds. Bring binoculars, bird field guides, and writing implements. Give each student a pair of binoculars, paper and pencil. Keep the bird guide with you and make them available to the students for consultation. Instruct the students to find a place where they can observe bird activity for some time. Tell them to focus on one bird at the time and to write down on the checklist all the behaviors that they observe. Instruct the student to pay special attention to the birds' beaks and feet, if they are visible. If they wish, the students can sketch the bird(s) they observe.

Extensions

- Build bird feeders and/or nest boxes. These can be placed in the schoolyard or in the students' backyards. Or they can be donated to a local senior center/ community center.
- Students keep a journal on which they write their bird observations, write bird poems and make drawings of their favorite birds.