



What Makes a Bird...a Bird?

Atlanta Audubon Society's *Learning About Birds* Curriculum Series

EDUCATOR'S GUIDE

Grade Levels
3 - 5

Objective

Students will learn about the traits that separate birds from other groups of animals and be able to recognize different body parts.

Background

Birds are separated from other vertebrate animals (*Phylum Chordata*) at the class taxonomic level, *Class Aves*. Feathers make birds unique. However all of these traits combined make a bird a bird:

- Feathers
- Wings
- Bill (Beak)
- Warm-blooded
- Fused, hollow bones
- Excellent eyesight
- Superior hearing
- Two-part stomach

Refer to the *What Makes a Bird...a Bird* student activity guide for detailed descriptions of these features. Other characteristics of birds to keep in mind are oviparity (egg-laying), high metabolic rates, specialized feet, a highly developed syrinx, and a complex respiratory system utilizing air sacs to store inhaled air. All of these characteristics have given birds the ability to fill specialized roles, or niches, in their communities.

The parts of a bird identified on the worksheet included with this guide are helpful in identifying and aging birds. Similar illustrations are often featured at the beginning of field guides. The more you look at birds, the more you will notice the differences in color, pattern, and relative size of body parts between species. For instance, the American Robin and Eastern Towhee are similarly sized ground-foraging songbirds with orange feathers on their undersides. Upon closer examination, one will notice that a towhee has a dark, cone-shaped bill and white feathers on its belly. A robin has a longer, yellow bill, a partial white eye ring, and is an overall larger bird. Encourage your students to learn the basic topography of a bird and they will be surprised at how much easier bird identification becomes.

Vocabulary

Adaptation – A trait (characteristic) that allows a living thing to survive in its environment.

Binocular Vision – When both eyes focus on one object.

Vocabulary continued

Feather – The soft, flexible, and lightweight structure made of keratin that forms the outer covering of birds.

Gizzard – A muscle that is part of the stomach that grinds and crushes hard pieces of indigestible food.

Monocular Vision – When eyes function separately of each other, allowing an animal to see more than one thing at a time.

Plumage - The color and pattern of feathers on a bird.

Trait – A genetic characteristic of a living thing; an observable feature.

Warm-Blooded – Describes an organism that can maintain its own body temperature; homeothermic.

Content and Skills aligned to Georgia Performance Standards

Science – S3P1b; S3L1c; S4L2a; S5P1b; S5P2a,c; S5L1a.

Systems & Modeling – S3CS4a,b,c; S4CS4a,b,c; S5CS4a,b,c.

Communication – S3CS5d; S3CS6a; S4CS5d; S4CS6a; S5CS5d; S5CS6a.

Activity 1 – Awesome Aves

Essential Question: How do the special features of birds allow them to fill different roles in their communities?

Suggested Time: 25-30 minutes

Space: Flat surface for students to write. You may conduct this activity indoors or outdoors.

Materials: Marker board/easel paper, bird photo, *What Makes a Bird...a Bird* student activity guides, blank paper, pencils. *Optional:* clipboards.

Instructional Methods

1. Hold up or project a photo of a bird. Pass out blank paper, pencils, and clipboards (optional). Instruct students to fold their paper in half lengthwise and create a T-chart. The left column should be labeled

Activity 1 – Awesome Aves continued

“Feature” and the right column labeled “Function.” Ask students to take 5-10 minutes to brainstorm quietly a list of special features of a bird and what the function of each is (what it allows a bird to do). They can look at the bird photo for ideas.

2. Bring the group back together and begin the discussion by asking what birds, mammals, fish, amphibians, and reptiles have in common. (They are all vertebrates, or animals with a backbone.)
3. Ask students to share a feature and its function from their lists. Encourage each student to contribute a feature. List them on the board/easel. There are many traits that students may list, including physical and behavioral adaptations. Ensure that “feathers” makes it onto the list.
4. Ask students what trait of all those listed on the board/easel make a bird unique? Explain that feathers separate birds from all other vertebrates.
5. Pass out the *What Makes a Bird...a Bird* student activity guides. Review the eight traits highlighted on the front page of the guide.

Activity 2 – Parts of a Bird

Essential Question: What are the different parts of a bird?

Suggested Time: 25-30 minutes

Space: Flat surface for students to write. You may conduct this activity indoors or outdoors.

Materials: Marker board/easel pad, *What Makes a Bird...a Bird* student activity guide, pencils. *Optional:* clipboards.

Instructional Methods

1. Ask the group to help you make a list of bird body parts. Write the list on the board/easel.
2. Ask the group which body parts humans also have. Make a check next to these parts. Circle the parts that only birds have (wings, tail, bill, and feathers). Discuss how the body parts that humans also have are different on birds. (For instance, birds have very large eyes for their body, holes for ears, scaled legs, and long toes.)
3. Optional: Challenge younger students to follow you in a different version of “Head, Shoulders, Knees, and Toes.” Tell them that you are using parts of a bird’s body that are different from humans. Create

Activity 2 – Parts of a Bird continued

body movements to go along with the song. See how fast the group can do it!

Bill, tail, wings, long toes, and long toes (2x)

Big eyes, ear holes, and feathers all over,

Bill, tail, wings, long toes, and long toes!

5. Pass out the *What Makes a Bird... a Bird* student activity guide. Instruct students to try completing the Parts of a Bird diagram. They may be able to deduce answers by applying what they know about the human body and the definitions of words.
6. Review the worksheet as a group using the answer key in this guide. Ask students why learning bird body parts could be useful. (It helps people identify different species, or types, of birds.)

Extension Ideas

- Continue Activity 2 by taking students outside or showing a video clip of birds. Tell students to describe body parts aloud when they see a bird. Try identifying the species based on the observations.
- Further explore bird features by building models. Create a bird out of straws and craft feathers. Build a model of hollow bones using sponges and toothpicks. Make a replica of a bird egg. These are just some ideas – let your students invent their own.
- Investigate the physical and chemical changes that take place within a bird’s digestive system. Can students build a model that replicates its functions?
- Explore the properties of feathers: use microscopes to examine prepared slides of feathers; build an insulator with craft down feathers; or simulate what happens to feathers when they get wet.

Performance Tasks and Assessments

- Using photographs of local birds, have students identify different body parts. Are any of these body parts important in identifying this species of bird?
- Assign a poster project that highlights important features of distinct birds like hummingbirds, penguins, flamingos, ducks, turkeys, or other types that students may be interested in.

Additional Resources

Burnie, D. 2008. *Eyewitness Birds*. DK Publishing Inc. New York. (Also available in Spanish.)



For more information on Atlanta Audubon Society's Learning About Birds curriculum series, please visit the Atlanta Audubon Society website at www.atlantaaudubon.org

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