LEVEL 1 | BOOK 7 | READABILITY LEVEL 3.6

Birds of a Feather

Story Summary

This story describes the differences among birds and relates them to the differences among the various tribes. It was told to the author by his grandfather.

Author/Illustrator

Henry Real Bird

Grade Level

1–3

Estimated Instructional Time

Three days (integrated science, reading, and art)

Materials/Resources Needed

- Class set of Birds and People
- Pictures of a variety of birds (be sure to include those in the story). Pictures of birds can be found on the Internet.
- Calendars and postcards also are good sources of bird pictures
- Local libraries are a rich source of bird picture books, field guides, and videos
- Drawing materials
- Chart paper/transparencies and markers
- Binoculars
- Internet access

Overview of the Lesson

Students engage in integrated learning activities that build observation and categorization skills as well as knowledge of different bird species and bird habitat. Subjects: reading, science, and art.

Student Objectives | Art

- Students will create a mural to demonstrate their understanding of NW bird habitat.
- Students will use artistic elements to create illustrations of specific birds.

Student Objectives | Reading

- Students will increase vocabulary related to birds and bird habitat.
- Students will compare and contrast information about bird species.
- Students will use reference materials to gather information about birds.
- Students will record scientific observations in journals.

Student Objectives | Science

- Students will observe birds in pictures and in natural habitats to build an understanding of their similarities and differences.
- Students will identify habitats in the NW that meet the needs of specific species of birds.

Teacher Background

There are more than 9,000 species of birds in the world, with about 800 found in North America. Birds evolved from small reptiles more than 160 million years ago. They still share some characteristics with reptiles, such as laying eggs and having scales on their legs and feet. Development of the ability to fly required not only feathers and wings but good eyesight, a sense of balance and fine muscle coordination. Birds are warm-blooded vertebrates. They have three characteristics which distinguish them from other animals: feathers, hard-shelled eggs and hollow bones.

Warm-Blooded Like mammals, birds are warm-blooded, meaning their internal body temperature is maintained at a constant level regardless of external conditions. This characteristic allows birds to maintain high levels of energy and a metabolic rate necessary for flight. By comparison, reptiles and amphibians are cold-blooded, meaning they rely on the temperature of the air and/or water to regulate their body temperature.

Feathers are an adaptation of reptilian scales. They range in size from 1/20 inch on a bird eyelid to the five foot tail feathers of a male peacock. In number they range from 1,000 on a hummingbird to 25,000 on a swan, and generally comprise 15-20 percent of the entire weight of the bird. Feathers perform a variety of functions, such as flight, regulation of body temperature (thermoregulation), protection of the body and skin, attraction of mates, and differentiation of species.

The feathers most commonly observed are contour and down feathers. Contour feathers cover the body of a bird and have a strong, hollow shaft and network of hooks or barbules. The contour feathers on the tail and wings have been modified for flight. Down feathers are small and lie under the contour feathers. The purpose of these feathers is to insulate the bird from the cold and protect against sunburn. Birds must take care of their feathers so they can continue to fly and remain warm.

Preening feathers spreads oils over the feathers and "re-hooks" the barbules. Even though they are kept clean, feathers become worn and are usually replaced at least once a year. This process is called molting.

Hard-Shelled Eggs Birds lay hard-shelled eggs made mostly of calcium carbonate. The hard shell keeps an egg from dehydrating and allows parents to sit on the eggs during incubation. Even though bird eggs are hard-shelled, they possess microscopic pores which allow oxygen to pass into and carbon dioxide to exit the shell. HOLLOW BONES Simply having feathers does not permit birds to be creatures of the sky. Extremely light-weight bones are also necessary for flight. Bird bones are strong and hollow, with internal bracings. Many bird bones are fused together, which increases the strength of the bones.

Instructional Plan - Learning Activities

Vocabulary

Bird, habitat, eagles, hawks, meadowlarks, magpies, chickadee, feathers, whistle, nest, Lummi, Skokomish, Muckleshoot, Sioux, Cheyenne, Blackfeet, Nez Perce, Yakima, plateau

SESSION #1

Show students a selection of bird pictures. Include: owl, eagle, hawk, robin, meadowlark, mallard, Canada goose, crow, magpie, western jay, chickadee, sage hen. Ask students to look at (observe) the pictures and tell you what they see. On chart paper or transparency record the comments. If necessary, seed the discussion with questions: What do you see that is the same in the pictures? What is different? What are the birds doing? Where have you seen birds like these before?

Using a Venn diagram record those observations that students identify as similar/same and those that are different. Similarities may include all the birds have feet, beaks, feathers, eyes, have nests, lay eggs. Differences may include eagles, hawks, owls have sharp, thick claws (talons), ducks and geese have webbed feet and flat beaks (bills) or great blue herons have very long legs and long bills or beaks.

Discuss possible reasons why birds might have different beaks, claws, wing size, etc. Generate a list of things with students that they want to find out about birds and record on chart paper. Questions might include: What do birds need to survive? Where do birds live? Does survival have anything to do with why there are differences in beaks, claws, wings, and feathers? Does the food birds eat relate to their physical features? How many different types of birds live near our school?

Read *Birds and People* with the students. After reading, ask students if any of their questions were answered in the story. Make a list of what was learned.

Have students identify the names of specific birds in the story and list these on chart paper or transparency. Then have pairs of students select a bird of interest to investigate.

Provide time for students to review library materials on birds and to investigate teacher-selected Internet sites that provide information on birds.

Students should locate a picture of their bird, types of food the bird eats, and where the bird build its nest. On 8.5" by 11" paper students should draw a picture of the bird with its name spelled correctly and a list of food sources and the bird's preferred nesting site (trees, marsh, cliff). Collect the posters and mount them to form a Bird Word Wall. As students learn about other birds more names can be added.

SESSION #2

Show students the National Audubon Society Regional Guide to the Pacific Northwest and discuss how all the information about birds is gathered. Introduce the idea of bird watching as a way of gathering data on birds. Just as birds need keen eyesight and hearing, human eyesight and hearing are important tools in bird watching or "birding." Sometimes humans need assistance with the eyes part so they use binoculars.

Show students how to use the binoculars (helpful to have several pair) and let them practice and discuss what happens to objects when they look at them through the binoculars.

After modeling the binoculars, tell students that for the next three days they are going to be bird watchers. It is crucial that bird watchers be super quiet and move slowly so they can both hear and see birds. Bird watchers pay particular attention to: the shape of the bird, feathers (plumage), color, voice, behavior, and habitat preference. Students will organize in partners for the trip around the school neighborhood. Each pair will try to locate as many different birds as possible and write characteristics in their journals. They may borrow binoculars for closer looks at their birds.

When students return to the classroom discuss what was observed. Have students use the field guides or atlas to identify birds they observed. Students then should use colored pencils to draw and label the bird they want to observe over the three days. Observation notes will be kept in their journals.

SESSION #3

Have students reread Birds and People in pairs. What did the birds in the story need to live or survive? If students don't come up with food, water, shelter, space then ask what they (the students) need to stay alive. Discuss the idea that some animals (birds) need to live in special places to survive and others can live in many different environments or habitats. What are some of the habitats in the

story? Trees (forest), rocks (mountains), ground (grassland or prairie), water (ocean, wetland). These terms should be added to the word wall.

Show students the National Geographic Field Guide to the Birds of North America or other bird atlas and discuss the different types of habitats. Organize students in pairs or groups of three to look through magazines and reference materials depicting the habitat of the bird they are investigating.

Each pair or group should have a large piece of butcher paper, markers, or crayons. On this paper they should draw the habitat of their bird and draw their bird living in this habitat. The name of the habitat and the name of the bird should be written on the top of the mural. Important food sources should be included, such as, mice, particular plants, or insects. The bird's nest should be visible and eggs included. On the back students should write their names and the date. Murals should be mounted in the classroom so students can take a habitat walk. Invite another class to take the habitat walk with your students available to answer questions.

EXTENSIONS

Create a feeding station with a watering source in the school yard. Feeders can be made from recycled materials (plastic soda bottles, milk cartons) to attract specific birds.

Books

- National Geographic Field Guide to the Birds of North America
- National Audubon Society Regional Guide to the Pacific Northwest
- The Audubon Backyard Birdwatcher: Birdfeeders and Bird Gardens
- Amazing Birds by Parsons & Young
- Bird Atlas by Taylor & Orr
- Where Do Birds Live? by Hirschi & Burrell

Student Assessment/Reflection

Observation journals, word wall posters, completed mural, and participation in discussions.

Native Americans

This site contains historical information about the various tribal groups in North America with extensive links to other sites. http://www.nativeamericans.com/