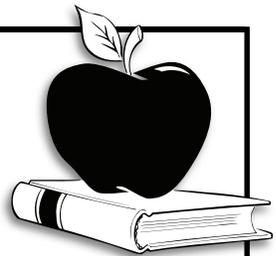


CLASS TIME: 30 minutes first day; 20 minutes second day

COMMON CORE STANDARDS: English language arts
MS Reading 7, MS Speaking and Listening 1, MS Speaking
and Listening 2, MS Speaking and Listening 4

TEACHER'S GUIDE



ACTIVITY

If There Were No Birds...

OVERVIEW

Through brainstorming and interviewing others, students hear and express an appreciation for birds.

CONCEPTS

Birds are economically, ecologically and aesthetically valuable.

OBJECTIVE

Students will be able to identify ways birds are beneficial to people and to the ecosystem they inhabit.

KEY POINTS

- People value birds in a variety of ways.
- Birds contribute to the ecosystem they inhabit.
- Research findings depend on the questions asked.

TEACHER BACKGROUND

Birds play an important role in food chains and ecosystem balance. Birds provide aesthetic enjoyment for people and function as indicators of the health of the environment.

Birds fill more than one niche in their food chains. Many birds, including most of our Neotropical migratory birds, are insect-eaters, consuming large numbers of both adult and immature insects and other arthropods (spiders and others). These birds, in temperate regions of North America, contribute to keeping insect populations in check. For example, a breeding pair of warblers can remove caterpillars from over a million leaves in a period of 10 days. Herbivorous birds act as seed dispersers—ingesting seeds, carrying them great distances and finally excreting them far from the host plant. Birds and/or their eggs may also be food for other predators, avian or mammalian.

A bird's role in the food chain is related to its function in maintaining ecosystem balance. Some birds are pollinators for plants and others act as seed dispersers. All birds participate in nutrient cycling in their habitats. For

example, a plant grows out of nutrient-laden soil. Larval insects survive on the plant tissues, and the insects are subsequently eaten by an ovenbird. The ovenbird becomes prey for a weasel, and the weasel returns the nutrients to the soil in its excrement.

Birds provide aesthetic enjoyment to many people. Identifying or watching birds is a hobby for a large number of people. There are others who enjoy bird feeding at their homes or appreciate listening to the chorus of bird songs in the spring. Some people enjoy hunting and eating certain birds. Many bird songs are territorial proclamations by males competing for mates. They tell other males to stay away and tell females they are seeking a mate.

Early miners took caged canaries (*Serinus canaria*) into the mines with them. A dead canary would alert the miners to the presence of colorless and odorless lethal gas in time for them to escape. Similarly, wild birds provide an indication of the health of the environment here and in Latin America. Declining bald eagle (*Haliaeetus leucocephalus*) populations led to the discovery of dangerous levels of DDT in the eagle's food. Researchers are using the bald eagle, osprey and common loon (*Gavia immer*) as biosentinels, monitoring their health for signs of pollution in the water and the fishes that comprise a large part of their diet. A decline in suitable habitat for our Neotropical migratory birds is often followed by a decline in bird populations. By studying bird population changes in different areas we can get ideas of habitat preferences of birds, and which habitat changes increase or decrease bird populations. Since migratory birds have certain needs in their breeding grounds, overwintering grounds and along their migratory routes, changes in populations may reflect changes in any or all of those habitats. The information we receive from bird populations can instigate research into the reasons for changes in the environment and promote action to safeguard the environment for human well-being.

PROCEDURE

1. Divide the class into small groups. Ask the groups to discuss various ways to complete this sentence: "If there were no birds left in the world," Compile information from each group to create a class list.
2. Review interview skills. Remind students to accept whatever answer the respondent gives to the question nonjudgmentally. Remind students that interviews are a tool that researchers can use to find answers to questions posed. Role play an interview. For homework, ask students to interview three people who are not class members. For the interviews, they should ask each person to complete the same sentence as above. They are to write down the responses they receive. Stress interviewing a wide range of people: other students; neighbors; bus drivers; store clerks; family members; etc. Encourage everyone to interview at least one person who is retired.
3. Have groups compile three to five other questions for the interview, such as: Do you put out bird feeders, birdhouses or birdbaths?; If so, why do you want to attract birds?; Which is your favorite bird, and why do you like that kind of bird?; Do you like to watch birds?; Did you know that many migratory bird populations are declining?; Why do you think some bird populations are declining?; and What do you think we should do about it?
4. Discuss the effectiveness of the small group so far.
5. After the interviews have been conducted, discuss the interview process and the most prominent responses. Add new answers to the class list envisioning a world without birds. Post this list in the classroom throughout the rest of the *One Bird—Two Habitats* unit. Introduce any bird contributions that have been omitted through discussion.
6. Discuss whether students in Latin America would complete the sentence the same way your students did.

DISCUSSION

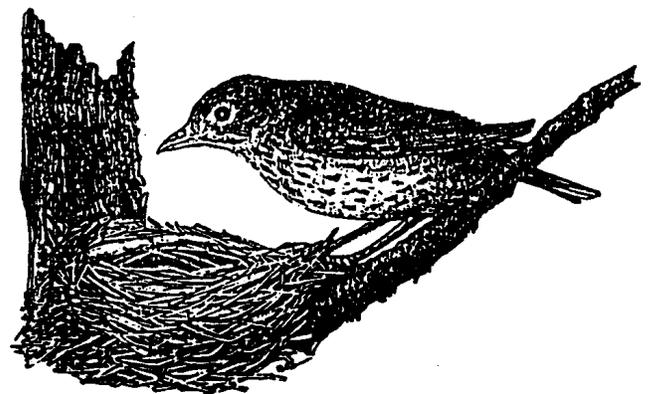
1. What were the most frequent responses to the interview questions? What points were omitted? How would you rate the quality of responses received? What other questions would you pose? What are the key points for persuasion?
2. Discuss how students value birds in relation to other animal groups. Do you think birds, as a group, are more or less important to forests or to us than insects, reptiles, amphibians or mammals?

EXTENSIONS

1. Categorize and graph interview responses. Classify the responses in the most logical categories possible. Calculate the percentages by classification.
2. What if there were no birds, and therefore, no bird songs? Students may want to experiment using earplugs on a bird walk to see what a "silent spring" would be like. Have students write stories, poems or songs to describe a world without birds. Publish a student's story in the local newspaper.
3. Research reasons that birds sing. For fun? For us? To announce their presence to potential mates? To warn others of the same species to stay away? Do birds sing more here or in Latin America?
4. Ask students: If a raccoon (*Procyon lotor*) could complete the sentence, what would it say? Complete the same sentence from an insect's point of view. Did this vantage point change student perspective on birds?
5. Discuss the poem, "The Oropéndola."

ASSESSMENT

1. Students will interview three people outside of class and collect appropriate data on interviewees. Responses should be turned in as a writing assignment.
2. Students will compile a list of 10 ways that birds are beneficial to people and/or the ecosystem.



THE OROPÉNDOLA

By Bosco Centeno

A military commander for the Sandinistas in the 1980s,
who fought in the Revolution of 1979.

The oropéndola on
the branch of the genízaro
pecks hungrily
at the red flesh
of a pitaya;
my presence
interrupts her meal
and, startled,
she flies off screeching.

LA OROPÉNDOLA

La oropéndola en
la rama del genízaro
picotea hambrienta
la roja carne
de una pitaya;
mi presencia
interrumpe su comida
y asustada
se aleja chillando.

oropéndola = a large coffee-colored bird with streaks of dazzling yellow in its tail

genízaro = one of the largest trees in Nicaragua, with a corpulent, elephantine base; a favorite shade tree

pitaya = a cactus with red flowers and edible fruit; grows on the limbs of trees and on rooftops

Reprinted from *Nicaraguan Peasant Poetry from Solentiname* (1988) with permission of the translator, David Gullette, of Simons College, Boston, Massachusetts.