



Birding By Ear

Overview

Students will identify local, native birds by songs and learn their function.

California Science Standards

Grade 3: 3.a.-L.S.

Grade 5: 6.a.-I&E

Grade 6: 7.b.-I&E

Grade 7: 7.a.-I&E

Oregon Science Standards

Grade 2: 3S.3

Grade 4: 2L.1, 3S.2

Grade 6: 3S.2

Grade 8: 1L.1

High School: 3S.2

National Standards

Content Standard A:

Science Inquiry

Content Standard C:

Life Sciences

Materials Included

* Student Journal

* Bird Song CD

* Audubon stuffed birds

Materials Needed

* Pencils

* CD player

Activity Time

Preparation: 15 min.

Activity Time: 35 min.

Best Season

Spring/Summer

Vocabulary

* Song

* Call

* Mnemonic device

Grade Level: 2nd-12th (O.S.S.: 2nd, 4th, 6th, 8th & 12th) (C.S.S: 3rd, 5th-7th)

Learner Objectives

Student will:

- Identify reasons why birds sing
- Describe functions of bird songs and calls
- Create mnemonic devices for five bird songs

Background Information

Birds vocally communicate with each other by producing a series of songs or calls. This form of communication, using sound, is especially important for birds. Unlike mammals, a bird's olfaction system, or sense of smell, is poorly developed. (Turkey Vultures are one exception to the rule and have extraordinary olfactory systems that can smell an animal carcass from more than 100 miles away). In addition to sound, birds visually communicate through their brightly colored plumages and elaborate displays. However, there are several disadvantages that come with this type of communication (for example, it is difficult to see other birds in dense forests and low light areas).

Bird sounds can be divided into songs and calls. The difference is that bird songs are long and complex, and almost exclusively produced by male birds during breeding season. Most bird songs signify establishment of a territory, displaying for a mate, or protection of a nest. On the contrary, bird calls are relatively shorter, simpler, and produced by both male and female birds throughout the year. They are mostly used to warn and threaten others of the same species or to make contact with family members.

In addition to understanding field marks and bird habitats, learning the different bird songs can help students identify birds in the field. This activity presents an interesting and useful way to teach bird songs – using mnemonic devices as ways to remember local bird songs.

Lesson Plan

Getting Ready!

1. Read background information section.
2. Make copies of *Student Journal: Birding By Ear*.
3. Decide on a site to visit and listen for birds (schoolyard or Crater Lake National Park trail).

Discuss!

1. Begin by asking students some questions:
Have you ever listened to birds sing— when, where? (If outside, ask students to listen to birds singing for a minute for so).
What do bird songs sound like? Why do birds sing?
2. Ask student what are 3 reasons birds sing (attracting a mate, establish territory, & defending a nest) and 3 reasons why they call (threatening, warning, or maintaining contact).
3. Explain that birders and biologists use special ways to remember birds songs. One system used is called a mnemonic device where bird songs are translated into words or phrases which a birder can always remember.
4. Show picture of the Mountain Chickadee and play its song using the Bird Song CD. Share the mnemonic phrase used to learn this bird song (“cheeeese...buurger, cheeeese...buurger”).

Investigate!

1. Let students know they will be listening to bird songs and that they should listen carefully.
2. Give students *Student Journal: Birding By Ear* sheets.
3. Ask students to write down mnemonic phrases that will help them remember the songs. Be creative. There is no right or wrong.
4. Show photo of each bird before playing each song. Then play the song and give ample time for students to think about and write down phrases. Repeat CD if necessary.
5. Ask students to share their mnemonic phrases as a group.
6. Have students look up the particular bird song in the *Birds of Oregon* field guide to compare phrases.

Go Outside!

1. Take students outside to a place where you know there are birds.
2. Pick a location where students can sit and listen for birds.
3. Ask them to record their bird song observations on the sheets.
4. Ask students to share their bird song observations.

Challenge Students!

After students create mnemonic phrases, test students' memory of bird songs. Replay the songs at random and have students write down the name or point to the photo of the bird. Also 2 mystery bird songs are located on the Bird Song CD. Use these songs to test advanced students.



Photo by Jim Livaudais

Classroom Tip

Play bird songs in the morning before class begins so students are immersed in bird vocalizations.

Lesson Plan

Follow-up!

Ask students 2-3 questions to re-cap the lesson (see right panel).

Nestlings!

- ✧ *Introduction:* To introduce the bird songs present the Audubon stuffed birds to students. Listen to the songs of the Great Horned Owl and the Dark-eyed Junco. If outside, have students listen to birds.
- ✧ *Pick a bird:* Have each student pick one of the 5 focus birds and have them be responsible for learning that song.
- ✧ *Before songs:* Before playing each song, show or have the student show the photo of the bird.
- ✧ *Repeat bird name:* Have students repeat the name of the bird together.
- ✧ *Repeat song/call:* After playing the song, ask students to repeat the song or call together as you define it. Remember you don't have to cover all the songs.
- ✧ *Going Outside:* Use bird song locator page of Student Journal.



Suggested Questions

What are 2 reasons why birds sing?

What are 2 reasons why birds call?

What is one way you can remember bird songs or calls?

What time of day do birds usually sing the most?

Mountain Chickadee



Photo by Tom Grey

When do birds sing?

Season: Most birds begin singing during the spring and summer. This is when they are looking for a mate or protecting territory. Singing or calling helps birds find and attract a mate as well as sustain and protect their nest. There are a few species that sing year-round.

Time of day: Birds generally sing during the morning hours and immediately before sundown.

Teacher Tips

What are bird songs?

Bird songs are long, complex, melodic, and almost exclusively produced by male birds during breeding season.

Function of Song:

- * Attracting a Mate
- * Strengthen Pair Bond
- * Establish Territory
- * Defend Nest



What are bird calls?

Bird calls are relatively shorter, simpler, and produced by both sexes throughout the year.

Function of Call:

- * Threaten others of the same species.
- * Alarm or warn others there is a presence of danger.
- * Contact family members.

How do birds sing?

Birds have a similar sound-producing device to the human larynx called the syrinx. Unlike the larynx which is located at the top of the trachea, syrinx is located directly below. As air from the lungs move over the syrinx, special membranes called tympaniform membranes vibrate generating sound waves. For this reason, birds are able to produce a variety of sounds.

Why do birds sing?

Birds communicate to each other through the production of sound in the form of songs and calls.



Photo by Jim Livaudais

During breeding season, the song of the American Robin is one of the first heard in the morning.

What is a mnemonic device?

A device used to remember bird songs or calls. This system translates songs into word phrases so they are easier to remember.