



Raptors Along the Road

Overview

Students will identify local raptors by flight patterns, body shape, and field marks.

California Science Standards

Grade 3: 2.a.-L.S
Grade 4: 3.b.-L.S

Oregon Science Standards

Grade 4: 2L.1
Grade 5: 2L.1

National Standards

Content Standard A:
Scientific Inquiry

Materials Included

- * Student Journal
- * *Raptors Along the Road* PowerPoint
- * Binoculars
- * Clipboards

Materials Needed

- * Spotting scope (optional)
- * Pencils

Activity Time

Preparation: 20 min.
Activity Time: Varies

Best Season

Winter/Spring

Vocabulary

- * Raptor

Grade Level: 3rd-5th (O.S.S: 4th-5th) (C.S.S: 3rd-4th)

Learner Objectives

Students will:

- Identify local raptors along the road by three criteria: flight patterns, body shape, and field marks
- Sketch five local raptors using one of the three criteria
- Observe local raptors on a field trip

Background Information

Driving along the roads of the Klamath Basin, you typically see raptors perched on telephone poles, fences, trees, or on the ground in a field. Sometimes you may see them soaring above, flapping, gliding, or coursing close to the ground. By identifying characteristics such as flight patterns, body shape, and field marks you can easily determine what type of raptor you are seeing.

First, what is a raptor? A “raptor” is a term used by ornithologists for eagles, hawks, falcons, and owls. They are also known as birds of a prey, due to the way they hunt and capture live food such as rodents or small birds. Raptors are among the fastest and strongest of all flying birds. They are characterized by their sharp-hooked bills and curved claws called talons. Flight patterns are below.

Soaring: During soaring, raptors take advantage of thermals, columns of warm air that rise when the ground is heated by the sun. Raptors such as Bald Eagles seek out these thermals and soar for hours without expending much energy. A soaring bird circles upward in a thermal column. Once a thermal dissipates into higher altitudes, it seeks out another rising thermal.

Flapping: Unlike soaring, flapping uses a great deal of energy. This is because a flapping bird thrusts its wings forward and back all in one motion to produce an upward and forward lift. It is similar to the rotating blades of a helicopter. Each blade rotates in a horizontal plane and is tilted slightly forward just like a wing of a bird. This position of the blades drive air downward to generate lift as well as drive air backward to thrust it forward.

Lesson Plan

Gliding: This flight pattern could be considered the opposite of soaring. When raptors soar, this allows them to rise, whereas, gliding is a downward motion. A raptor can glide down at a controlled angle by partially withdrawing its wings. Soaring and gliding are often combined during flight, so that a raptor can effectively ride a thermal column by soaring and then glide to find another one.

Coursing: This term is used to describe flight that is low to the ground. Northern Harriers are considered coursing raptors. Generally harriers will course over open fields in search of their prey.

Getting Ready!

1. Read over background information and teacher tips.
2. Make copies of *Student Journal: Raptors Along the Road*.
3. If going on a field trip, determine driving routes.

Discuss!

1. Ask students if they know what a raptor or bird of prey is.
2. Ask students if they know any raptors by name.
3. Let students know they will be practicing identification of raptors by flight pattern, body shape, and field marks.
4. Explain to students the four different flight patterns raptors use: Soaring, Flapping, Gliding, and Coursing.
5. Explain to students what it means to identify animals by the body shape. Asking the following questions can help: *Is it small or large? Is the raptor bulky or long and thin? Does the raptor have a long tail or stubby one? Are the raptor's wings rounded or pointy wings?*
6. Explain to students what a field mark is. *A field mark is a physical characteristic of an animal that helps biologists identify it in the field. For instance, a Red-Tailed Hawk has a dark brown band across its belly or a Northern Harrier has a white rump.* (See *Bird ID Experts!* for info.)

Investigate!

1. Give each student a Student Journal.
2. Show the raptors in the *Raptors Along the Road* PowerPoint.
3. Ask students a few questions before sharing information about each raptor. *Have you seen this raptor before? What are some field marks? Describe its body shape.*
4. Explain each raptor using the PowerPoint script.
5. Ask students to sketch raptors during the PowerPoint.
6. Have students record flight pattern, body shape, and field mark of each of the five raptors in their journal.

Raptor Myths

MYTH: Golden Eagles and other large raptors can carry away sheep and even small children!

FACT: While Golden Eagles and raptors in general are strong birds, capable of carrying prey heavier than they are, they are simply not strong enough to carry away a sheep, other livestock, or a child. There have been reports of raptors feeding on livestock that is already dead, perhaps creating the myth. Raptors are beneficial to farmers because they help control small mammal populations.



Using Field Guides!

Have students look up 1-2 raptors in the field guide to learn more about their life history traits. Or have them look at the range maps of all of the raptors and create a list of those found in the Klamath Basin in the current season.

Lesson Plan

Take a Drive!

1. Let students know they will be going on a driving field trip during which they will be identifying local raptors by the three criteria: flight patterns, body shape, and field marks.
2. Pass out binoculars.
3. Make sure students have their journals.
4. Ask students to observe closely telephone poles, fences, irrigation fences, and fields during the drive.
5. Ask students to record their observations in their journals.

Follow-up!

1. Ask students 2-3 questions to re-cap lesson. See right panel.

Interesting Fact:

The Klamath Basin is a hotspot for wintering raptors.

It has the largest concentration of bald eagles in the lower 48 states!

Suggested Questions

What is a raptor?

What is one way to identify a raptor in the field?

Name two local raptors.

Tip:

Try to schedule your field trip between December and March.

A great place to view raptors is site #43, Lava Beds National Monument, at Petroglyph Point.



Teacher Tips

Identify Raptors by..

Flight Patterns, Body Shape, & Field Marks.



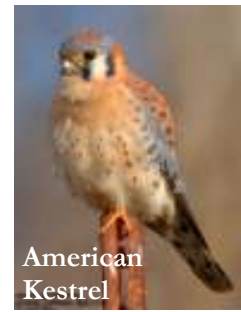
American Kestrel

Photo by Jim Livaudais

Flapping: American Kestrels display powerful wing beats & high speed dives.

Body Shape: When in pursuit of prey their long tail and short pointed wings allow them to make streamlined dives.

Field Marks: Eye and chin stripes.



American Kestrel

Photo by Jim Livaudais

Flapping & Gliding: Sharp-shinned hawks powerfully beat their wings.

Body Shape: Their rounded wings allow them to continuously flap their wings while their long thin tail helps with maneuvering through dense trees and brushes.

Field Marks: Brown speckles on belly.



Sharp-shinned Hawk

Photo by Jim Livaudais



Sharp-shinned Hawk



Photo by Jim Livaudais



Northern Harrier

Photo by Jim Livaudais

Coursing: Northern Harriers are typically found coursing low across fields & marshes in search of field mice or other small mammals.

Body Shape: Exaggerated hourglass.

Field Marks: White rump observed during flight.



Northern Harrier

Photo by Jim Livaudais

Gliding: Red-tailed Hawks can glide for hours, expending little energy.

Body Shape: Large broad wings and chunky tail.

Field Marks: Dark brown belly band and red tail (in adults only).



Red-tailed Hawk

Photo by Jim Livaudais



Red-tailed Hawk

Photo by Jim Livaudais



Immature Bald Eagle

Photo by Jim Livaudais

Soaring: Bald Eagles usually soar with flat extended wings.

Body Shape: Large body with long extended wings.

Field Marks: White feathers on the head and tail (in adults only).



Bald Eagle

Photo by Jim Livaudais