Living Coast Discovery Center
Field Trip Resource Packet

Beaks & Feet

In this packet you will find lessons and resources related to your Living Coast field trip. The first two activities are intended to bookend your trip, followed by additional resources.

Career Focus: Ornithologist
I study the behavior, physiology and conservation of birds and their habitats. I also monitor and assess the status of a particular population of birds, track their movements, analyze data, and assess the impact that humans and the climate may have on that population.

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Observation Game

Lesson Objectives:

- Students will be able to explain how observation helps scientists study animals
- Students will be able to define ornithologist

Standards:

- 1.LS3.1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- SL.1.1.A. Follow agreed-upon rules for discussions (e.g., listening to others with care, speaking one at a time about the topics and texts under discussion).

Outline:

Let students know that on their virtual field trip they are going to be ornithologists. An ornithologist is a scientist that studies birds! They will be learning all about the different habitats that birds live in and how they find their food. When ornithologists go out into nature, first they have to find the birds! Where would you look for a bird? (in a tree/bush, on the ground, flying in the sky, swimming, etc.) Once the scientist has found the bird, they need to look closely to try and figure out what kind of bird it is. How could you tell different birds apart? (size, color, beak shape, behavior etc.)

To help us practice being excellent observers, we are going to play a game! The game is as follows:

- Students sit facing a partner
- One student is the observer, the other is the subject. Have the observer spend a minute noticing everything they can about the subject.
- Have both partners turn their backs. The subject should change three things about their appearance (hair, roll up sleeve, take on/off accessory, etc.)
- Partners turn back to face, observer guesses what has changed
- Switch roles

Distance Learning Adaptations

- The game can be played with any size group of students in a video chat. Choose one child to be the subject, all others are observers
- Subject moves off camera or turns off camera to make changes
- Observers raise hand and are called on by teacher to make guesses. Mute all students who are not guessing to prevent shouting out.

Birds through the Tube

Lesson Objectives:

- Students will be able to explain how observation helps scientists study animals
- Students will begin to observe different parts of a bird and note how they help the bird to survive.

Standards:

- 1.LS1.1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- 1.SL.1.4. Describe people, places, things, and events with relevant details, expressing ideas and feelings clearly.
- 1.SL.1.5. Add drawings or other visual displays to descriptions when appropriate to clarify ideas, thoughts, and feelings.

Materials:

- Binocular worksheet
- (2) Toilet paper tubes
- Markers/pens for decorating
- Stapler or glue
- String
- Nature journal

Outline:

While they won't have a "zoom" function, students can print out this template and tape/glue it around two toilet paper tubes to make their own pair of binoculars. Then assign students to go out on a nature walk, ether together as a class or around their neighborhood. Ask students to look for 1-3 birds and record in their nature journals observations such as: beak shape, eye size, color, feet type, wing & body type, what the bird is actively doing, where the bird lives, etc.

Afterwards, bring the students together to compare observations. Note similarities and differences. Have the students discuss what conclusions can be drawn by their observations, such as what the bird might eat, how it takes care of it's offspring, and other needs it meets.

Binocular craft template:

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Frank Schaffer's Primary Club FS-970301
©Frank Schaffer Publications, Inc.

A Bird Watcher's Tool

Fine motor skills

1.

2.

Name

paste

Teacher: Reproduce this page on construction paper. Fold around 2 cardboard toilet paper rolls.

Reading a Bird Booklet

Printable informational booklet about bird adaptations

Booklet Folding Instructions:

1. Begin with the page vertically

2. Fold in half "hamburger" style

3. Fold in half again, so that the title page is at the front

4. Open the booklet to view the inside pages and cut along the solid lines

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Reading a Bird!

You can learn to read a bird,
almost like a book!
You won't see a printed word,
just feet and beaks,
and feathers -- look!

The Job of Feet

Webbed feet swim.

Sharp claws or
talons catch animals.

Long legs wade in
the water.

The Job of Beaks

Short, thick beaks
crack...

Sharp beaks
catch...

Pointy beaks
make holes in
trees.

Wide beaks that
look like saws
can catch...

The Job of Feathers

Flight feathers help
birds push the air so
they can fly.

Small, fluffy down
feathers help birds
stay warm

What bird has no flight
feathers, only down feathers?

Cut

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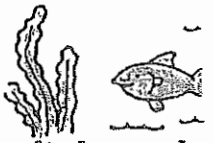
Penguins live
where it's cold.
They don't fly.
They swim.
Down feathers
keep them warm!

seeds

animals

insects



fish and
plants

Beak Mimics

15 Minutes Introduce the Challenge!

Now that your students have become bird beak experts, they are going to become engineers! Many engineers look to nature for ideas to help them solve problems. Using something found in nature to help you solve a problem is called biomimicry. Your class will mimic bird beaks to design something to help them grab stuff that is too far away to reach with their arms.

Divide students into groups of 3 or 4. Each group gets assigned a common item (pencils, counters, books, paper clips, etc.) that they must be able to pick up with their grabber. Try to have a wide variation of shape, texture and weight: this will
encourage the groups to find inspiration from different bird beaks and not "copy" each other!
Provide students with a list of supplies they can use to build their beak. *Since they are not actually building their grabbers, you don't need to have these available. However, we recommend having at least one of each supply at the front of the room to help students visualize. Supplies could include: paper cups/plates/bowls, popsicle sticks, pipe cleaners, tape, glue, construction paper, plastic silverware, straws.*

40 Minutes Work on Design

Before they begin planning, have each group discuss what their grabber needs to do. As they discuss, circulate around the groups and ask the students questions to get them thinking: Is their object small, or large? Skinny or thick? Pointy or smooth? Does your grabber need to be big or small? Can it pick up one piece like a fishing bird or does it need to scoop like a pelican? What bird beaks did we learn about that might help them with their design?

Students should work with their groups to design a grabber that will pick up their assigned object. They should write the bird beak they are mimicking on their design sheet. Their design should have a drawing of their grabber, labeled with the materials that they plan to use. To help ensure that all students are participating, you can give each student in the group a different colored marker. Their final drawing should have all the colors on it!

20 minutes Presentations

Each group gets a chance to tell the class about their grabber – what bird does it mimic, what materials did they use, and how does it work?

If you are short on time, pair up groups and have them present to each other only. So Group A would present to Group B; at the same time Group C would present to Group D. Then they would switch; Group B presents to Group A and Group D presents to Group C.

If you have time, there are videos and images of beaks that other students have designed here: https://www.curiositymachine.org/challenges/4/

Native Birds Coloring Sheets

Coloring sheets with birds native to San Diego County. Challenge students to look up birds and color them in accurately!

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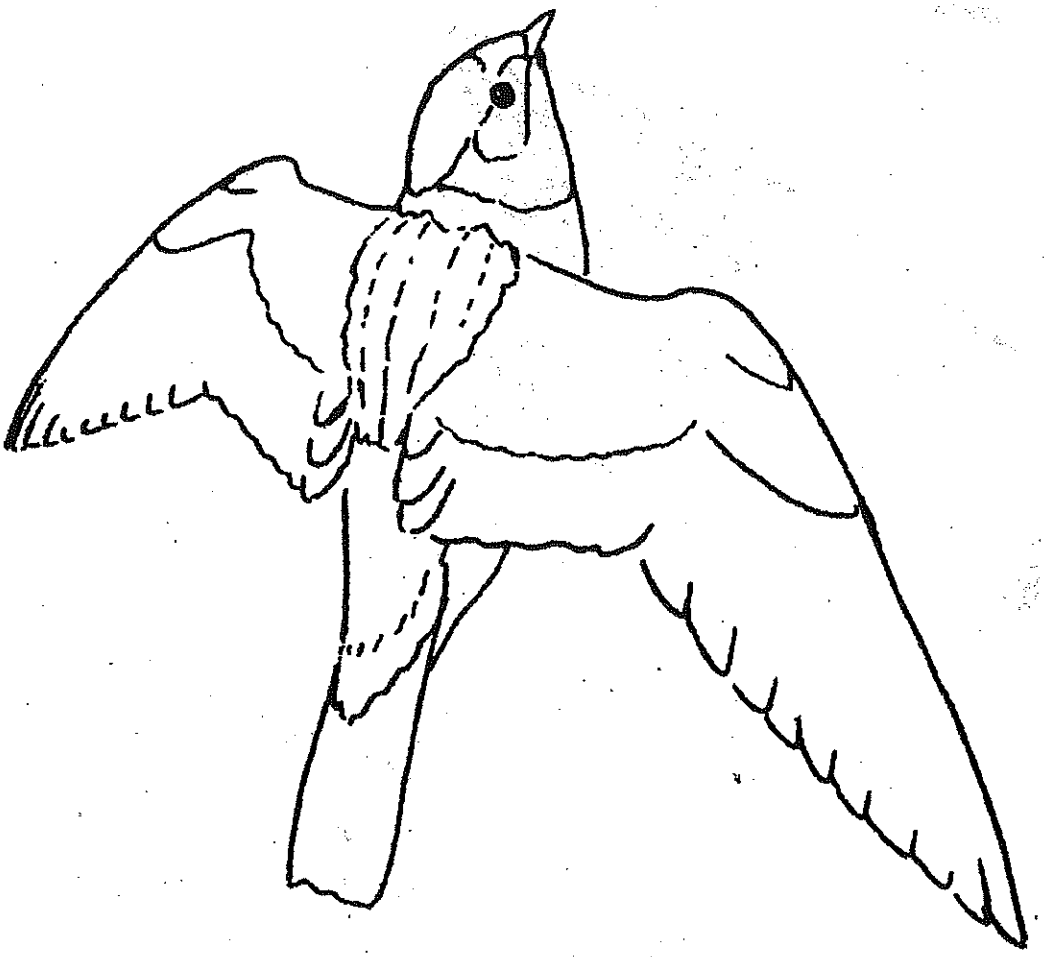
Cliff Swallow



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Northern Mockingbird

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Anna's Hummingbird

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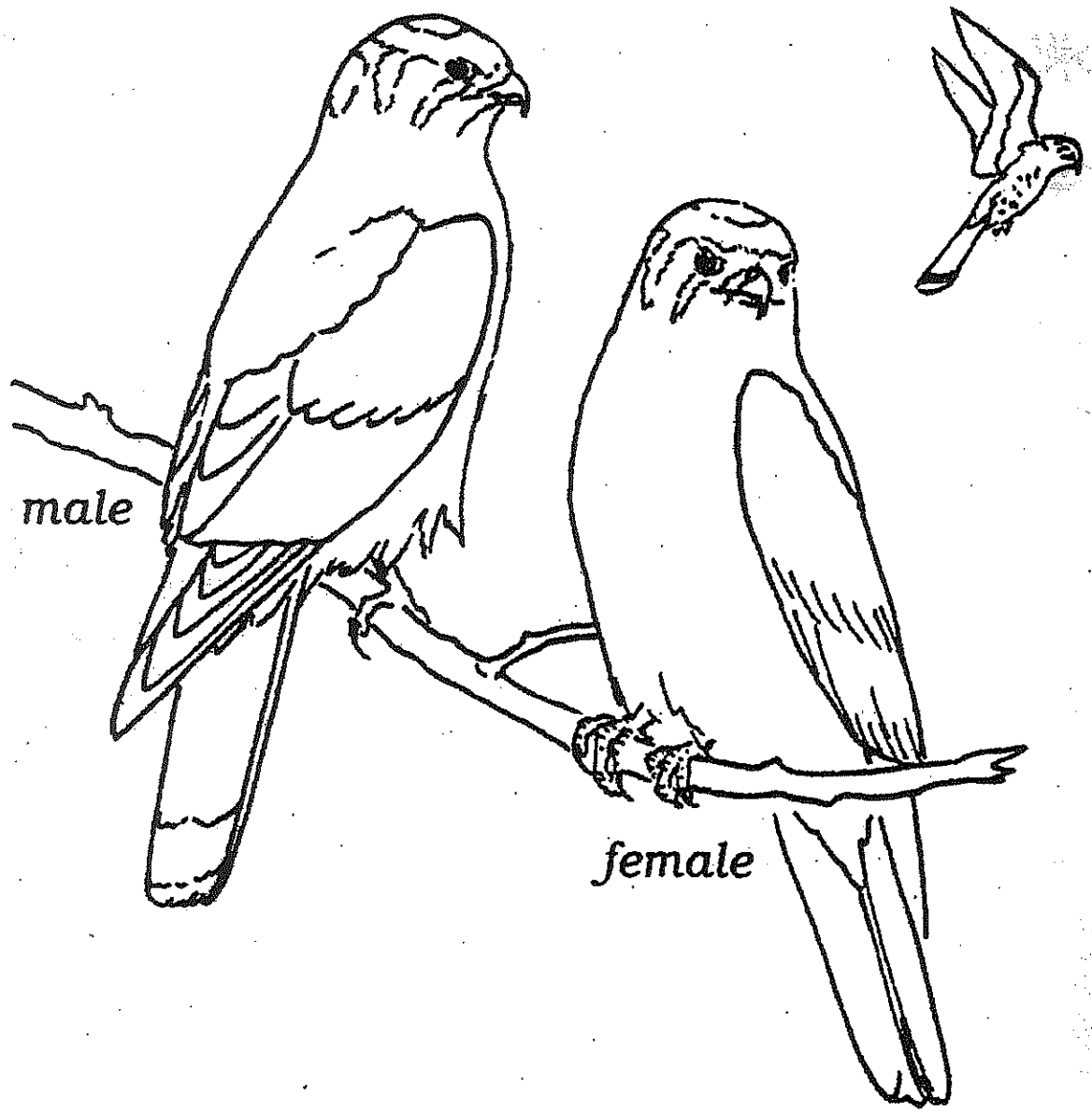

American Kestrel

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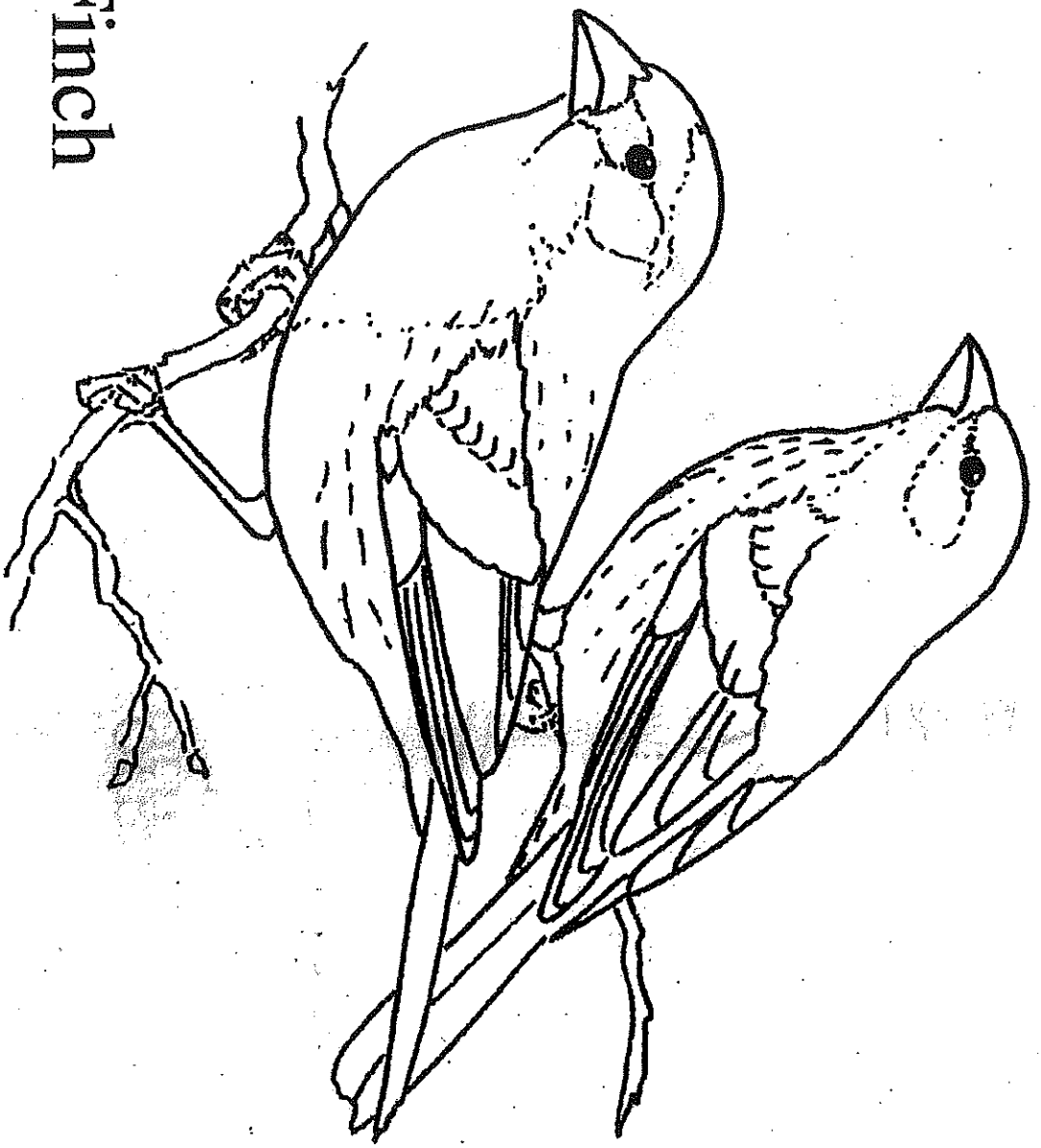
House Finch



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Killdeer

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Resources

Merlin Bird ID App
This is an easy-to-use website and app that helps identify birds that you see using descriptions or pictures. It is produced by the Cornell Bird Lab. Encourage your students to try and spot birds that they see on walks with their families.
https://www.allaboutbirds.org/guide/

Live Bird Cams
Observe bird nests and chicks in the wild from Cornell BirdLab:
https://www.allaboutbirds.org/cams/

Endangered Burrowing Owls and California Condors from the San Diego Zoo:
https://zoo.sandiegozoo.org/live-cams?gclid=CjwKCAjwqJ_1BRBZEiwAv73uwDon9LLgO_e9wPEuMIDILzmkxFHVvjHvEQ0buoapGFOGuH2ZjFEPNBoCg-UQAvD_BwE

Bird Song Hero
Learn about bird songs in this online game from Cornell BirdLab
https://academy.allaboutbirds.org/features/bird-song-hero/bird-song-hero-tutorial

Printable Activity Book
https://www.birds.cornell.edu/k12/free-resources/

Photo/Video Slideshow
Google Slideshow of different bird beaks and how they eat
https://docs.google.com/presentation/d/1yP1QxVkWCIcZeDg7Ek93kzv9k9jklW6_NufzMdc-CMg/edit#slide=id.i81

Outdoor Family Fun with Plum
App from PBS Kids providing families with challenges to complete outside by exploring nature in their yard or neighborhood.0
https://pbskids.org/apps/outdoor-family-fun-with-plum.html

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