



GRADE 2



COAST TO CACTUS IN SOUTHERN CALIFORNIA

Curriculum and Lesson Plan Resource Guide



theNAT
SAN DIEGO NATURAL HISTORY MUSEUM



Grade 2 Beaks and Bills

Essential Question

Why do birds that live in the estuary have beaks and bills of different shapes?

Estuaries and wetlands are home to dozens of species of birds. They all have different adaptations to find and eat different types of food. Some birds have long bills to dig for clams and crabs deep in the sand. Some have deep bills to scoop fish from the water. Some have short beaks to catch bugs. With so many different ways of hunting and eating, the birds aren't all competing for the same resources.



Activity: Bird Beak Matching Game

In this activity, students use their observation and research skills to make discoveries about bird adaptations.

Materials

- Printed student sheets and images of birds
- Double-sided tape or glue stick
- Scissors
- Writing tools

This activity can be done by students working independently, in pairs, or in groups, before or following a visit to the *Coast to Cactus in Southern California* exhibition. (See Page 2 for activity instructions.)

Bird Beak Matching Game

Key words

Estuary

An area where a river flows into the sea.

Wetland

An area of land (such as a marsh or swamp) that is covered with shallow water.

Adaptation

Something a plant or animal has that makes it better able to live in a particular place.

Ecosystem

All the living things that exist in a particular environment and how they impact one another.

Habitat

The place or type of place where a plant or animal naturally or normally lives or grows.

Before the activity

- Print a student page for each student and answer key for the teacher.
- Cut out bird images (one set for each student).
- Print images of southern California wetland birds. These can be found online at the *Explore the Region from Coast to Cactus* website. Visit coasttocactus.sdnhm.org.
- Schedule a field trip to the NAT. Reservations are required for all group visits. Please call 619.255.0349 to make your reservation or go online to sdnat.org/schoolprograms.

During your Museum visit

Ask students to pay special attention to the estuary exhibit, just inside the entrance and to the right.

How many different birds can they count? What are the birds doing? What do they notice about their beaks and bills? Have students interact with the “Different beaks for different needs” activity.

Back in the classroom

1. Introduce the wetland or estuary area. Let your students know that in estuaries—one type of coastal wetland—fresh water from rivers and streams meets the ocean’s salt water. Some animals call this place home all year. The birds soaring above rely on the shelter of wetlands to nest and raise their young. Many species of birds can coexist here on the shore because their beaks are adapted in ways that help them capture specific types of prey. This means the birds don’t have to compete with one another for food.
2. Show your students three or four different images of wetland birds. Ask them questions that help to describe the birds. **What color is the bird in the photo? What is it doing? Is it flying or walking on the ground? What do you think it likes to eat? How big do you think the bird is?**

NGSS Alignment for Grade 2

Performance expectation: 2-LS4-1

Science & Engineering Practices	Disciplinary Core Ideas	Crosscutting Concepts
Planning and Carrying Out Investigations	LS4.D: Biodiversity	Structure and Function Stability and Change

Interdisciplinary Common Core Connections: W.2.7, W.2.8, MP.2



3. Hand out the student sheets, the four cutout bird images, and tape or scissors to each student, student pair, or group.
4. Introduce the matching activity. Each bird image sheet has four pictures of wetland birds. Students need to match each bird to the descriptions on their worksheet. Once students think they have matched the birds, they can tape or glue the picture below the description. If students need help with the words in the description, please refer to the key words definition section of this lesson plan.
5. Using your answer guide, read each bird description on the student sheet and ask your students which bird they matched to the description.
6. Wrap-up. Based on the descriptions from the student sheet, ask your students what types of food each bird eats. Guide them towards understanding that each type of beak or bill is good for eating a different type of food. Because the birds all eat different things, they can live together in the same area without competing for the same food sources. That's why in the wetland you can have many species of birds in one place.

Extension

- Have students research a bird from a different type of southern California habitat—mountains, desert, chaparral, or coastal sage scrub—and compare their beak adaptation and diet to those of

Key words

Beak

The hard, usually pointed, parts that cover a bird's mouth (sometimes called a "bill").

Crustacean

A type of animal (such as a crab or lobster) that has several pairs of legs and a body made up of sections that are covered in a hard outer shell.

Mollusk

Any one of a large group of animals (such as snails and clams) that have a soft body without a backbone and that usually lives in a shell.

Resource

A place or thing that provides something useful.



the estuary birds. Students can use the *Explore the Region from Coast to Cactus* website to learn more about the birds found in the southern California region. Visit coasttocactus.sdnhm.org.

- Students can visit one of these local estuaries or lagoons and look for birds featured in the exhibition:

Los Peñasquitos Lagoon
Newport Bay Marine Park
Agua Hedionda Lagoon
Mission Bay/San Diego River Estuary
Goleta Slough (Santa Barbara)
Soledad Creek Estuary

Tijuana Estuary
Baticuitos Lagoon
San Elijo Lagoon
San Dieguito Lagoon
Buena Vista Lagoon

What will they learn?

In this activity, students learn that different types of birds all live in the same wetland or estuary habitat. Because birds have different beak or bill adaptations, they can survive side-by-side in the same environment because they are adapted for hunting and eating different food. This means that they are not all competing for the same food resources.

Additional Resources

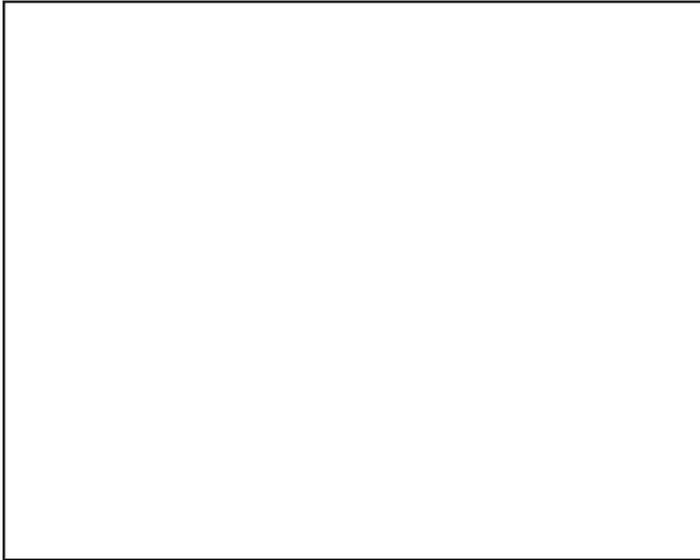
- Check out a specimen from our Nature to You Loan Library. Specimens related to this lesson include: Willet, Brown Pelican, Canvasback Duck, Marbled Godwit. For more information visit sdnat.org/specimenssearch or contact the Loan Library at loanprogram@sdnhm.org or 619.255.0236.
- Use the *Explore the Region from Coast to Cactus* website to learn more about the different habitats in the southern California region. Visit coasttocactus.sdnhm.org to journey through coastal areas, mountains, and deserts, and to learn more about San Diego's amazing diversity of plant and animal life.

Beaks and Bills

Name: _____

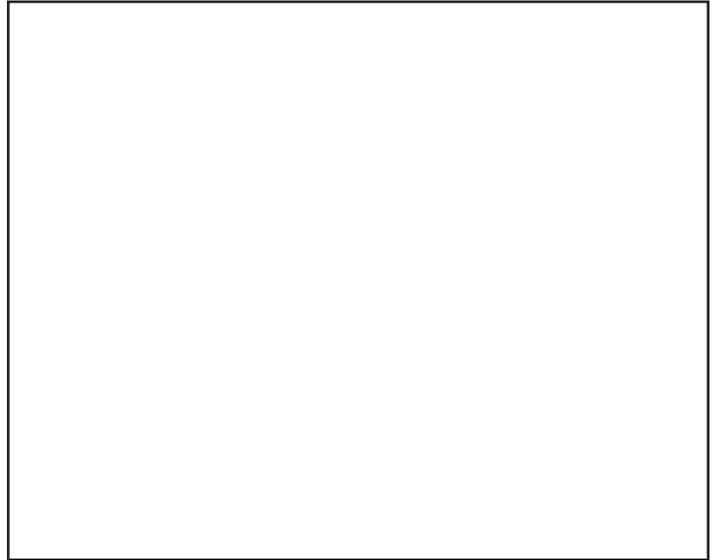
Marbled Godwit

I probe the mud with my **long, thin beak** trying to find crustaceans and mollusks to eat.



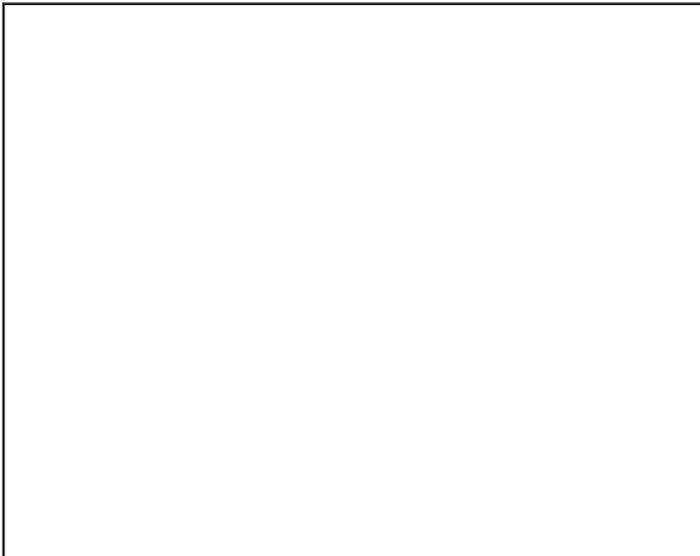
Willet

I forage along the shore using my **short, thin beak** to eat insects, worms, small mollusks, and small crabs.



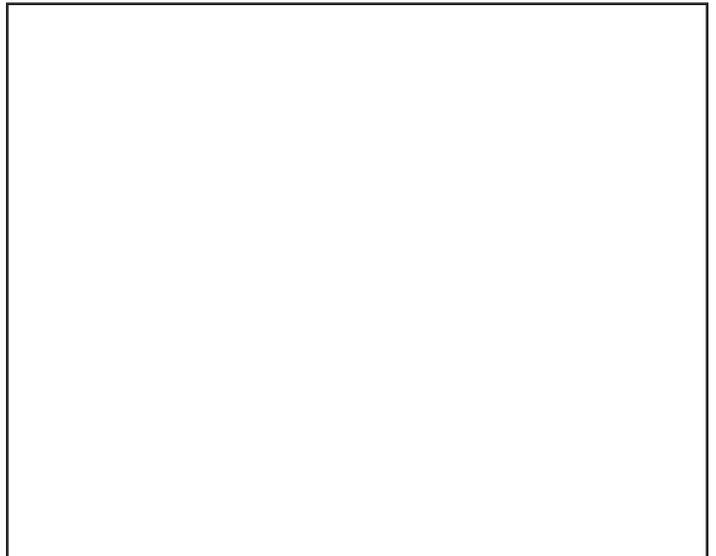
Brown Pelican

I'm a large water-loving bird with big wings. I feed by diving from high up and scooping up fish in my **oversized bill**.



Canvasback Duck

I'm a type of duck with a **flattened beak** that is also called a bill. I dive underwater to eat seeds, leaves, roots, snails, and insect larvae.



Beaks and Bills

