



## **Chompers and Stompers**

**Overview:** In this activity, students will learn the different ways birds use their bills and feet. They will explore these differences by breaking into groups and finding the chompers and stompers that go with their group's bird.

**Activity Adapted From:** Birds: Chompers and Stompers, Salt Marsh Manual – Don Edwards San Francisco Bay NWR and Migratory Bird Costume Party, National Conservation Training Center

### **Recommended Grades:**

2 and up

**Key Concepts:** Birds have adaptations that enable them to eat certain types of food and live in certain habitats. These adaptations include the shape of the bird's bill and design of the bird's feet.

### **Objectives:**

Students will be able to:

- define adaptation
- describe how birds' bills and feet are adapted to eat certain types of food and live in certain habitats
- name one thing they can do to protect habitats for birds

### **Possible Locations:**

- anywhere on Refuge

### **Materials Provided by the Refuge:**

- photo for each group of birds
- cutouts of 24 bills and 24 feet (4 sets from each group)

### **Time Frame for Conducting this Activity (25 minutes)**

**Set up** (5 minutes)

**Introduction** (5 minutes)

- adaptations
- reason for different bills and feet

**Chompers and Stompers** (15 minutes)

- break into six groups
- talk about different bills and feet while handing out photos
- students find their bill and foot
- talk about each group's adaptations

**Discussion** (5 minutes)

- what happens if habitat is destroyed
- what students can do to help

### **How this Activity Relates to the Refuge's Resources**

**What are the Refuge's resources?**

- significant wildlife habitat
- endangered species
- migratory birds
- resident wildlife

**What makes it necessary to manage the resources?**

- Wildlife may eat or become entangled in trash such as balloons, fishing line and Styrofoam peanuts.
- Loss of wetland habitats for wildlife due to development, such as landfills, buildings, agriculture land, roads, etc makes it more difficult for wildlife to find food, water, shelter and space.

**What can students do to help?**

Refuge staff acquire and preserve wetland habitat, but we need your help!

- be responsible for your own trash
- reduce, reuse and recycle, decreasing the need for landfills
- never dump anything down storm drains – pollution can contaminate and destroy wildlife habitat
- adopt a wetland or an endangered species
- only take your dog to place they are permitted and keep it on a leash
- keep your cat inside your house; they catch birds
- teach others what you have learned about habitats and endangered species

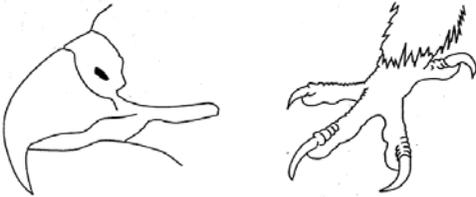
## Supporting Information About This Activity

### **Bills and Feet**

- Birds that use the habitats around the Sacramento Valley have specialized bills and feet that determine the type of food they eat and the type of habitat they live in. Look at the bills and feet below to get an idea of the variety of these adaptations.

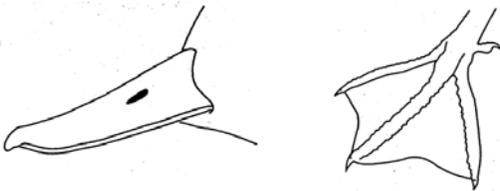
### **Raptors**

- Large hooked bill and large talons.



### **Waterfowl**

- Flat bill and webbed feet.



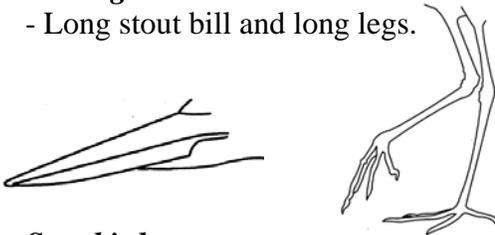
### **Shorebirds**

- Long thin bill and long skinny toes.



### **Wading Birds**

- Long stout bill and long legs.



### **Songbirds**

- Small pointed or needle-shaped bill and small skinny toes.



### **Seabirds**

- Fish-eating bill and large webbed feet.



### **Prior to Activity** (5 minutes)

- Get out enough bill and foot cutouts so that each student will get one bill and one foot. Plan so that there's about an even number of each type of bird: raptor, waterfowl, shorebird, wading bird, songbird and seabird.
- Note if group numbers don't allow for even bird groups, put out extra bills and feet for all of the birds.
- Separately - mix up the bills and mix up the feet.
- There are numbers on the backs of the cutouts that correspond with numbers on the backs of the pictures.

### **How to Lead This Activity by Following the "Do, Read, Ask" Teaching Format**

#### **Introduction** (5 minutes)

#### **Do**

Have students sit down in front of you.

#### **Read**

"The shape of a bird's bill and the design of their feet allow them to eat certain kinds of food. Today, we're going to break into six bird groups and take a closer look at their chompers and stompers. Once we've done that we'll explore their eating habits and the habitats of these bird groups."

#### **? I do have a few questions before we break into groups though; can you think of some of the ways birds use their bills and feet?**

(Bills: to probe for creatures in the mud, to catch flying insects, to act like a strainer, catching fish and tearing meat.

Feet: for wading, walking on mud, perching, grasping, capturing, carrying prey and swimming.)

**? What does adaptation mean?**

(A change in a living thing that helps it survive.)

**? Why do birds have different bills and feet?**

(Each type of bird has a special bill and tongue adapted to eating a certain type of food. Just like we use our hands and mouth to eat food, each bird has a bill specially designed for the kind of food it eats. For example, hawks and owls have sharp hooked bills for tearing meat.

The same goes for feet; birds are adapted to living in different habitats. For example, some birds need feet to swim, while others need long legs so they can wade in water.)

**? Think about a duck. Can you describe a duck's bill and feet?**

(Webbed feet and wide, flat bill.)

***Chompers and Stompers*** (15 minutes)

**Read**

“OK, I’m going to break you up into six groups and we’re going to discover the groups of birds.”

**Do**

Break the students up into six groups. As you talk about each group of birds hold up the photo, then when you’re done talking about it give the photo to a group.

**Ask**

**? First we have raptors. What can you tell me about their chompers and stompers?**

(Raptors have large hooked bills and large talons.)

**? Next up we have waterfowl. What can you tell me about their chompers and stompers?**

(Waterfowl have flat bills and webbed feet.)

**? Third, we have shorebirds. What can you tell me about their chompers and stompers?**

(Shorebirds have long thin bills and long skinny toes.)

**? Next, what can you tell me about the chompers and stompers of wading birds?**

(Wading birds have long stout bills and long legs.)

**? Fourth, what can you tell me about the chompers and stompers of songbirds?**

(Songbirds have small pointed or needle-shaped bills and small skinny toes.)

**? Last, we have seabirds. What can you tell me about their chompers and stompers?**

(Seabirds have fish-eating bills with salt glands and large webbed feet.)

**Read**

“OK, now that you all know a little bit about your group of birds you’re going to each find a bill and a foot to go with your type of bird. For example, (*hold up the seabird foot*) this foot may be webbed but it doesn’t belong in the waterfowl group. Think about what other bird group had webbed feet, but shhh keep it to yourself.

**Do**

Set out all the bills and feet in two groups that are far enough apart so that the students can gather around each pile. If you’re outside set them on the ground.

**Read**

“When I say go, and this is not a race so don’t be in too much of a hurry, find a bill and a foot for your type of bird. If you can’t find one ask your group for help or see if someone accidentally picked up the bill or foot for your bird.

“Any questions?”

“OK, go!”

**Do**

As the students are picking out their bill and foot keep an eye on whose picking what to make sure they get the correct ones. If you notice one is incorrect ask them why they chose that one and lead them in the direction of the correct one.

Once everyone has the correct bill and foot have them get back in their groups and take a seat.

### **Read**

“Now that you all have a bill and foot for your type of bird let’s take a closer look.

“We’ll start with the raptors; show the group your large hooked bills and large talons.”

### **Do**

When you ask the following questions about the bird types start by asking the group that has that bird type and then open it up to the rest of the groups if needed.

### **Ask**

**? So thinking about a raptors hooked bills and talons, what do they eat and why do you think that?**

(Raptors use their sharp-hooked bill for tearing meat and their talons for grasping mice or other rodents, small birds and fish.)

**? What is their favorite habitat?**

(Raptors can often be found perching in trees next to open fields where they look for prey to swoop down on.)

### **Read**

“Next up we have waterfowl; show the group your flat bills and webbed feet.”

### **Ask**

**? Thinking about their flat bills and webbed feet, what do they eat and why do you think that?**

(Waterfowl use their flat bills for scooping up plants, seeds, invertebrates (animals without backbones) then straining the water out.)

**? What’s their favorite habitat and why do you think that?**

(Waterfowl can often be found in shallow or deep water in wetlands where they use their webbed feet for swimming and walking around on muddy surfaces.)

### **Read**

“How about our shorebirds; show the group your long thin bills and long skinny toes.”

### **Ask**

**? Thinking about shorebirds and their long thin bills and long skinny toes, what do they eat and why do you think that?**

(Shorebirds use their long thin bills for probing the mud for worms and other invertebrates.)

**? What’s their favorite habitat and why do you think that?**

(Shorebirds can be found along the water’s edge in wetlands or at the ocean where their long skinny toes come in hand for wading and walking in the mud.)

### **Read**

“Next, wading birds; show the group your long stout bills and long legs.”

### **Ask**

**? Thinking about wading birds and their long stout bills and long legs, what do they eat and why do you think that?**

(Wading birds use their long stout bills along with their long necks to spear their prey, which includes fish, frogs, snakes and crayfish.)

**? What’s their favorite habitat and why do you think that?**

(Wading birds can often be found in shallow water or on land slowly walking looking for prey. They use their long toes and long legs for wading in water and walking on muddy surfaces.)

### **Read**

“Next up we have songbirds; show the group your small pointed or needle-shaped bills and small skinny toes.”

### **Ask**

**? Thinking about songbirds and their small pointed or needle-shaped bills and small**

**skinny toes, what do they eat and why do you think that?**

(Songbirds use their slim and sharp bills for catching insects and eating seeds.)

**? What's their favorite habitat and why do you think that?**

(Songbirds can be found flitting around trees and perching on branches or on the ground looking for insects and seeds.)

**Read**

“Last we have seabirds; show the group your fish-eating bills with salt glands and large webbed feet.”

**Ask**

**? Thinking about seabirds and their fish-eating bills with salt glands and large webbed feet, what do they eat and why do you think that?**

(Seabirds eat, you guessed it, fish!)

**? What's their favorite habitat and why do you think that?**

(Seabirds can be found at sea, but also in wetlands – we even get some seabirds such as pelicans and cormorants out here at the Refuge. They use their large webbed feet to swim in open water and their salt glands help them deal with the salt they ingest while drinking and feeding. These salt glands extract (*get*) the salt from the water and excrete (*push out*) the salt through the glands.)

**Discussion** (5 minutes)

**Read**

“One reason this refuge exists is to protect migratory birds. The Sacramento National Wildlife Refuge provides habitats for many birds to rest, eat, nest and raise their young.”

**Ask**

**? What happens to birds when habitats around the Sacramento Valley are destroyed?**

(The birds don't have anywhere to feed, nest or rest while migrating.)

**? Can the birds that are adapted to live in the marshes move to the forests? Why or why not?**

(No, they are not adapted to live and feed in the forest.)

**? Can birds that usually feed on mud creatures start eating grasses? Why or why not?**

(No, their bills are not designed to eat grasses.)

**? How does trash in refuge habitats harm birds?**

(Birds may eat or become entangled in trash, such as fishing line, Styrofoam peanuts or balloons.)

**? How can you help the Refuge protect birds from trash?**

(Don't pollute and help pick up trash and learn about the habitats and birds and tell others.)

**Read**

“Good job! I'm going to collect all the bills and feet along with the pictures from each group, so stay seated until I'm finished.”

“Any questions on chompers and stompers?”

**Do**

If you're the last group to use this activity gather all the materials and bring them into the visitor center or to the Refuge staff member that was helping your group. Thank you!