

HIDE AND BEAK



 TEXAS
SCIENCE &
NATURAL
HISTORY
MUSEUM
The University of Texas at Austin

Table of Contents

Page	Activity	Recommended Age Group	Recommended Time
1	Educator Guide	Educator	
3	Hide and Beak	3 rd grade and above	10-15 minutes
4	Structure and Function	3 rd grade and above	10-15 minutes
5	Scavenger Hunt	PreK – 3 rd grade	10-15 minutes

Educator Guide

Concepts:

- Animals, including birds, have physical variations and adaptations specific to their ways of life.
- We can often infer a bird’s diet from the size and shape of its beak (bill).

Learning objectives:

In this activity students will:

- describe the relationship between a bird’s anatomy, particularly its beak size and shape, and its feeding behavior and diet (this is an excellent example of the principle of “form fits function” observed in biology).
- compare beak structures and their corresponding functions.

Science TEKS (Adopted 2017)	TEKS (Adopted 2021 to go in effect Fall 2024)
Grade 3: §112.14 (b) 10A Grade 4: §112.15 (b) 10A Grade 5: §112.16 (b) 2D, 9A, 10A (STAAR RS)	Science 1. 1E, 1F, 3A, 3B, 5F, 13A Science 2. 1E, 1F, 3A, 3B, 5F, 13B Science 3. 1E, 3A, 3B, 5F, 13A Science 4. 1E, 3A, 3B, 5F Science 5. 1E, 3A, 3B, 5F, 12A,13A

Location: Texas Wildlife Gallery (3rd Floor)

Time: 15-20 minutes

Supplies: worksheet (2 versions; the simpler version does not require writing names), pencil, clipboard

Vocabulary: *raptor, bird of prey, generalist, probing, chiseling, dip-netting* (vocabulary used to describe birds’ eating behaviors may be unfamiliar to students, but they can use context clues to find the answers to the worksheet), bill vs. beak (these two words are interchangeable, but ornithologists use bill more often than beak)

Planning your visit	
Pre-visit	<ul style="list-style-type: none"> • Give students background information to review vocabulary related to basic bird anatomy, types of birds and their feeding behaviors.
During the visit	<ul style="list-style-type: none"> • Teachers and chaperones should monitor students’ gathering of evidence and offer support by pointing out characteristics of bird beaks that help students identify birds and their feeding habits. They can also offer clarifications for filter feeders and categorization of wrens as insect eaters. (See notes on the Hide and Beak example responses page).
Post-visit	<ul style="list-style-type: none"> • Students may complete the Hide and Beak Review as a classroom activity or for homework. • Ask students to share information about their favorite birds from the museum by relating the structure of the bird’s beak to its feeding behavior. • Students may conduct independent research on common birds of Texas, including their names, ranges, habitats, feeding behaviors, and mating behaviors (see the List of Birds on the 3rd Floor for suggestions). The Cornell Lab of Ornithology website (www.allaboutbirds.org) is an excellent resource for learning about North American birds’ life histories. Additionally, check field guides such as Peterson, Kaufman, National Geographic, or Sibley for information and images.

Educator Guide

The Texas Wildlife Gallery (3rd floor) includes the following birds:

- Rio Grande Turkey
- Canyon Wren
- Red-tailed Hawk
- Turkey Vulture
- Black-bellied Whistling Duck
- White-tailed Hawk
- Mourning Dove (located in Oak Woodlands region)
- Chihuahuan Raven (located in Puma case)
- Northern Mockingbird
- Attwater's Greater Prairie Chicken
- Crested Caracara
- Pileated Woodpecker
- Burrowing Owl
- Barn Owl
- Golden Eagle
- Cliff Swallow
- Greater Yellowlegs
- Lesser Yellowlegs
- American Avocet
- Long-billed Curlew
- Black-necked Stilt
- Willet
- Scaled Quail
- Greater Roadrunner
- Green-winged Teal
- Wood Duck
- White Pelican
- Laughing Gull
- Herring Gull
- Ring-billed Gull
- Royal Tern
- Northern Jacana

Hide and Beak

Name: _____

The shape and size of birds' beaks can tell us a lot about what and how birds eat. How many of the examples of the following bird beaks can you find in the Texas Wildlife Gallery (3rd floor)? Whenever you find a bird with one of the beaks below, write its name in the space next to the picture.



Generalist

Beaks of medium length and thickness can have many uses, such as cracking seeds, catching insects, or eating fruits.

Example(s): _____



Probing

Very long, tubular beaks, curved slightly downward, are used by shorebirds for probing into sand or mudflats to find small invertebrate animals buried in sediment.

Example(s): _____



Chiseling

Straight, sturdy beaks are used by woodpeckers and sapsuckers to chisel through tough tree bark.

Example(s): _____



Dip netting

Extremely long beaks with large pouches are used like nets to catch whole fish while diving underwater!

Example(s): _____



Insect catching

Short, pointy, beaks—flat and wide when viewed from above—are used for gleaning insects off of bark, leaves, and plants, or catching insects in the air.

Example(s): _____



Raptorial

Large, hooked beaks are used by raptors (birds of prey, such as hawks and eagles) to kill live prey and then rip off pieces small enough to swallow whole. Example(s):



Seed eating








Beaks that are pointed, short, and thickly cone-shaped are used to crack open nuts and seeds.

Example(s): _____

Structure and Function

Name: _____

Adaptations such as beak size and shape allow birds to survive on specific sources of food. Fill the table by writing the letter of the feeding behavior from the list on the right next to the beak it matches. You will not use all the feeding behaviors in the list.

1		
2		
3		
4		
5		
6		
7		

Feeding Behaviors

- a. Dip-netting
- b. Scavenging
- c. Raptorial
- d. Insect catching
- e. Seed eating
- f. Generalist
- g. Probing
- h. Nectar drinking
- i. Chiseling
- j. Filter feeding

To the right is a picture of an adult Turkey Vulture, a common bird throughout the United States. You may have seen them flying over your school or home.

- a. Which beak from the pictures above resembles the Turkey Vulture's most?
- b. How is it similar to the Turkey Vulture's beak?
- c. How is it different from the Turkey Vulture's beak?
- d. What kind of feeding behavior do you think the Turkey Vulture has? (Hint: It's in the list of feeding behaviors above.)



Images not to scale. Wikimedia Commons, L. Shayamal, Shravans14

Scavenger Hunt

Name: _____

How many of the different types of bird beaks can you find in the exhibits in the Texas Wildlife Gallery (3rd floor)? Whenever you find a bird with one of the beaks below, circle its picture.

Hint: Not all the beak types can be found in the museum.



Generalist



Insect catching



Seed eating



Coniferous-seed eating



Nectar feeding



Fruit eating



Chiseling



Dip netting



Surface skimming



Scything



Probing



Filter feeding



Aerial fishing



Pursuit fishing



Scavenging



Raptorial

Images not to scale. Wikimedia Commons, L. Shayamal, Shravans14