

EVERYTHING HAS A PURPOSE

Grade Level	Ideal for 4 th grade Appropriate for ages 8-11	
Exhibitions	<i>Gidwitz Hall of Birds</i> <i>Plants of the World</i>	
Time	1 hour	

Overview

In this exploration, students will examine the function of plant and bird structures and discuss the relationship between structure and function.

Guiding Questions

How is the structure of a bird's foot related to its function?

How do specific structures of a plant help the plant survive?

Key Words

Function - the way something works or operates

Pollinator - an agent (e.g., a bird or insect) that moves pollen from one plant to another

Prey - an animal hunted by another animal for food

Talons - sharp claws on the feet of some birds

Connections to Standards

Next Generation Science Standard

Disciplinary Core Idea LS1.A: Structure and Function

Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction (4-LS1-1)

Common Core State Standard for Writing

W.4.8: Recall relevant information from experiences or gather relevant information from print and digital sources; take notes and categorize information, and provide a list of sources.

Trip Tip: When students first enter an exhibition, encourage them to look around freely before asking them to concentrate on completing this guide. Becoming familiar with their learning space will help students focus.

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Chaperone Guide

Map

Exhibitions:

Ronald and Christina Gidwitz Hall of Birds (Main Level)

Plants of the World (Upper Level)



If you have extra time, visit these related exhibitions:

World of Mammals (Main Level)

Evolving Planet (Upper Level)

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Chaperone Guide

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Student Guide

NAME _____

Think (before you explore)

What kinds of birds do you see in your neighborhood? What are some unique features of the different birds that you see? How do these features help birds survive?

At The Field Museum you will observe specific features of birds and plants and think about how unique structures help these organisms live in their environments.

Observe and Explain (in the exhibition) – Part A

Travel to the **Gidwitz Hall of Birds** exhibition located on the **Main Level**.

Find a bird that has feet that would be good for **catching prey.**

Draw the bird's foot here:	How does this foot help the bird catch prey?
Bird's name:	

Find a bird that has feet that would be good for **swimming and diving.**

Draw the bird's foot here:	How does this foot help the bird swim/dive?
Bird's name:	

Find a bird that has feet that would be good for **walking and running.**

Draw the bird's foot here:	How does this foot help the bird climb?
Bird's name:	

Trip Tip: Birds that have adapted to primarily walk and run on the ground usually have three forward-facing toes that tend to be long and straight for stability, and one backward-facing toe that is very short. (In contrast, birds that are adapted to spend time perched in trees often have long curved forward and backward-facing toes for grasping onto branches.) Birds adapted for running and walking include chickens, grouse, and quail.

Trip Tip: Before you begin, find a bench or a spot on the floor. Give the students an overview of this activity and ask them the **Think** questions.

Trip Tip: Birds that catch prey with their feet often have sharp, curved talons. Ask students to think about how talons are like fishhooks. The curved shape of fishhooks prevents caught fish from escaping. Birds that catch prey with their feet include falcons, hawks, and eagles.

Trip Tip: Birds that swim often have webbed feet. Encourage students to think about how webbed feet are like flippers. How does wearing flippers help a human swim? Birds with feet adapted for swimming include loons, ducks, and grebes.

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Observe and Explain (in the exhibition) – Part B

Travel to the *Plants of the World* exhibition located on the **Upper Level**.

Find a plant with a flower.

Draw the flower here:

Flowers attract pollinators to help plants reproduce. What features of this flower might attract a pollinator?

Plant's name:

Trip Tip: Remind students to walk through the exhibition first before making their selections.

Trip Tip: Encourage students to think about the color, shape, size, and odor of the flower.

Find a plant with an interesting stem or root.

Draw the stem or root here:

Stems and roots help plants grow toward resources like sunlight and water. What features of this stem or root help this plant get the resources it needs?

Plant's name:

Trip Tip: Encourage students to look for features of stems (e.g., strong, flexible, thick, thin) and features of roots (e.g., deep reaching, shallow, wide, or narrow).

Find a fruit.

Draw the fruit here:

Fruits protect seeds and help the seeds travel. What features of this fruit keep the seeds protected and help them disperse?

Plant's name:

Trip Tip: Seeds can travel when animals eat them. Animals cannot digest most seeds, so eaten seeds travel through an animal's digestive system and are eliminated as waste.

Share and Compare (after you explore)

Pick a partner. In your group of two, choose one person to be Person A and the other Person B. If you're Person A, choose one of the birds you saw today and describe how the structure of the foot helps the bird survive in its environment. If you're Person B, choose one of the plants you saw today and describe how the plant's flower, stem, root, or fruit helps it survive in its environment.

Trip Tip: Find a quiet spot in the Museum to discuss the **Share and Compare** activity or ask students to draw and write answers to these questions when they return to school.

Trip Tip: A fruit is the part of a plant that has seeds in it. This could include seedpods, nuts, and berries.

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Student Guide

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At The Field Museum you will observe specific features of birds and plants and think about how unique structures help these organisms live in their environments.

Observe and Explain (in the exhibition) – Part A

Travel to the ***Gidwitz Hall of Birds*** exhibition located on the **Main Level**.

Find a bird that has feet that would be good for catching prey.	
Draw the bird's foot here:	How does this foot help the bird catch prey?
Bird's name:	

Find a bird that has feet that would be good for swimming and diving.	
Draw the bird's foot here:	How does this foot help the bird swim/dive?
Bird's name:	

Find a bird that has feet that would be good for walking and running.	
Draw the bird's foot here:	How does this foot help the bird climb?
Bird's name:	

Observe and Explain (in the exhibition) – Part B

Travel to the *Plants of the World* exhibition located on the **Upper Level**.

Find a plant with a flower .	
Draw the flower here:	Flowers attract pollinators to help plants reproduce. What features of this flower might attract a pollinator?
Plant's name:	

Find a plant with an interesting stem or root .	
Draw the stem or root here:	Stems and roots help plants grow toward resources like sunlight and water. What features of this stem or root help this plant get the resources it needs?
Plant's name:	

Find a fruit .	
Draw the fruit here:	Fruits protect seeds and help the seeds travel. What features of this fruit keep the seeds protected and help them disperse?
Plant's name:	

Share and Compare (after you explore)

Pick a partner. In your group of two, choose one person to be Person A and the other Person B. If you're Person A, choose one of the birds you saw today and describe how the structure of the foot helps the bird survive in its environment. If you're Person B, choose one of the plants you saw today and describe how the plant's flower, stem, root, or fruit helps it survive in its environment.