

## Photo Description



These are white ibises, tall wading birds with long, curved red beaks and pink legs. They are walking in shallow water and muddy areas, looking for food in the ground and water. You can see a group of them working together in their natural wetland home.

## Scientific Phenomena

Anchoring Phenomenon: Birds use their special body parts to find and catch food in specific habitats.

Scientific Explanation: White ibises have evolved long, curved beaks specifically designed to probe into mud and shallow water to hunt for small organisms like crustaceans, insects, and small fish. Their long legs keep their bodies dry while they wade through water. This is an example of adaptation—physical features that help animals survive and meet their needs in their environment. The ibises gather in groups (called colonies) because shallow wetlands provide abundant food and safe nesting spots.

## Core Science Concepts

- \* Animal Adaptations: The ibis's long beak, long legs, and curved bill shape are special body parts that help it find food in muddy water and shallow areas.
- \* Habitat and Survival: Ibises live in wetlands (marshes, swamps, and shallow waters) where they can find the food and water they need to stay alive.
- \* Animal Behavior: Ibises often feed in groups, which provides protection and helps them find food together more efficiently.
- \* Food Chains: Ibises are predators that eat small animals living in water and mud, making them an important part of the wetland ecosystem.

### Pedagogical Tip:

For Kindergarteners, focus on observable features: "What do you notice about the ibis's beak? Why do you think it's shaped like that?" Avoid abstract concepts like "natural selection." Instead, use simple cause-and-effect language: "A long beak helps the bird find food in the mud."

### UDL Suggestions:

To support multiple means of representation: Use real photos, hand puppets, or drawings of ibises. Provide sensory experiences by letting students feel different textures (smooth, bumpy, curved) to mimic different beak shapes. For students with visual processing needs, highlight the beak and legs with bright colors in a simplified diagram. Consider using sign language for key vocabulary words like "beak," "wade," and "food."

## Zoom In / Zoom Out

### Zoom In — Microscopic Level:

At a close-up level, the ibis's beak has thousands of tiny sensory nerves at the tip. These nerves help the bird feel for prey in the mud without seeing it. The bird's stomach has special acids that break down food into tiny pieces the body can use for energy and growth.

### Zoom Out — Ecosystem Level:

Ibises are part of a large wetland ecosystem. The shallow water provides habitat for fish, frogs, insects, and plants. These animals depend on each other: plants give food and oxygen, small animals feed larger birds like ibises, and birds help spread seeds and control pest populations. Wetlands also protect communities from flooding and clean water. When wetlands are damaged, ibis populations decline because they lose their home and food source.

## Discussion Questions

- \* "What does the ibis use its long beak for?" (Bloom's: Remember | DOK: 1)
- \* "Why do you think the ibis walks in water instead of on dry land to find food?" (Bloom's: Analyze | DOK: 2)
- \* "If the ibis's beak was short and straight instead of long and curved, what would change about how it finds food?" (Bloom's: Evaluate | DOK: 3)
- \* "How does living in a group help these ibises stay safe and find food?" (Bloom's: Analyze | DOK: 2)

## Potential Student Misconceptions

- \* Misconception: "The ibis's beak looks like a straw, so it drinks water through it."
  - Clarification: The curved beak is used to dig and probe in mud to catch small animals like bugs and shrimp. The ibis drinks water, but it uses its beak to hunt for food, not to drink like a straw.
- \* Misconception: "Birds have teeth to chew food like we do."
  - Clarification: Ibises don't have teeth. They swallow food whole. Their stomach (called a gizzard) has strong muscles that grind and break down food, similar to how our teeth work.
- \* Misconception: "The ibis walks in water to wash itself."
  - Clarification: The ibis walks in water and mud because that's where its food lives. The water helps it move quietly and stay cool while hunting.

## Extension Activities

- \* Beak Detective Game: Give students different tools (spoon, tweezers, stick, fork) and have them try to pick up small objects from a shallow tray of sand or water. Ask: "Which tool works best? Why? That's like the ibis's curved beak!" This helps them understand how the shape of a tool (or beak) matters.
- \* Wetland Habitat Diorama: Create a shoebox wetland using blue paper for water, brown paper for mud, toy animals (ibises, frogs, fish), and plants. Let students place animals where they live and discuss what each animal needs to survive in the wetland.

\* Beak Shape Craft: Give students straws, pipe cleaners, craft sticks, and popsicle sticks to create different "beak" shapes. Have them test each shape by picking up cereal, crackers, or pom-poms from a bowl. Record which beak shape is best for each food type. Connect to: "Just like the ibis has the perfect curved beak for mud, different beaks work best for different foods!"

## Cross-Curricular Ideas

\* Math: Count the ibises in the photo. Sort them by size (big, medium, small). Create a simple bar graph showing "How many birds are in the water?" vs. "How many are on land?"

ELA/Literacy: Read the book Click, Clack, Splash! by Doreen Cronin or Ibis: A Life\* by Lulu Delacre. Have students draw pictures of ibises and write or dictate one word that describes them (e.g., "tall," "hungry," "smart").

\* Social Studies: Discuss where ibises live (wetlands in the United States, Caribbean, and Central America). Find these places on a simple world map. Talk about how people and animals share the same land.

\* Art: Create an ibis painting using watercolors, focusing on the white feathers and red beak. Display student work in a "Wetland Gallery."

## STEM Career Connection

\* Ornithologist (Bird Scientist): An ornithologist is a scientist who studies birds—how they live, what they eat, where they build nests, and how to protect them. If you love birds like ibises, you could study them and help keep their homes safe! Average Salary: \$63,000–\$75,000 USD

\* Wetland Ecologist: A wetland ecologist studies and protects swamps, marshes, and shallow waters where animals like ibises live. They work to keep these habitats healthy so birds and other creatures have safe homes. Average Salary: \$58,000–\$72,000 USD

\* Wildlife Photographer: A wildlife photographer takes beautiful pictures of animals in nature, like ibises in the water. These photos help people learn about and care for animals. Average Salary: \$32,000–\$65,000 USD

## NGSS Connections

Performance Expectation:

K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.

Disciplinary Core Ideas:

- K-LS1.A: All organisms have external parts that they use to perform daily functions. (The ibis uses its beak and legs to find food and move through its habitat.)

Crosscutting Concepts:

- Structure and Function: The shape and structure of the ibis's beak allows it to function as a tool for hunting in mud and water.
- Patterns: Patterns of behavior, such as ibises gathering in groups and foraging in shallow water, show how animals meet their needs.

## Science Vocabulary

\* Beak: The hard, pointed part of a bird's mouth that it uses to eat and explore.

- \* Wading: Walking slowly through shallow water.
- \* Adaptation: A special body part or behavior that helps an animal survive in its home.
- \* Habitat: The place where an animal lives and finds food, water, and shelter.
- \* Wetland: An area of land that is wet and marshy, like a swamp or marsh, where many animals live.
- \* Predator: An animal that hunts and eats other animals.

### External Resources

Children's Books:

Click, Clack, Splash!\* by Doreen Cronin (illustrated by Betsy Lewin)

Ibis: A Life\* by Lulu Delacre

Birds by Kevin Henkes (from the Animals Welcome\* series)