Pelican

Life Science | Lesson Guide

Kindergarten

Photo Description

A big brown bird sits on a wooden post near the water. The bird has a very long beak and yellow head feathers. This bird is called a pelican and it lives near the ocean.

Scientific Phenomena

The anchoring phenomenon here is animal adaptation for survival. This pelican displays specialized body structures that help it catch fish and survive in its coastal environment. The large throat pouch (gular sac) can expand to scoop up fish and water, while the long, pointed beak is perfectly designed for diving and catching prey. The webbed feet (not visible but present) help it swim efficiently. These adaptations developed over millions of years to help pelicans thrive in marine environments.

Core Science Concepts

1. Animal Body Parts and Functions - Different animals have special body parts that help them survive, like the pelican's big beak for catching fish
2. Habitat Requirements - Animals live in places that give them what they need (food, water, shelter)
3. Animal Behaviors - Pelicans have special ways of hunting and living that help them get food
4. Living vs. Non-living - The pelican is alive and needs food, water, and air to survive

Pedagogical Tip:

Use hand gestures and body movements when teaching about animal adaptations. Have students pretend to be pelicans by making scooping motions with their arms to mimic how pelicans catch fish. This kinesthetic approach helps kindergarteners remember the connection between body parts and their functions.

UDL Suggestions:

Provide multiple ways for students to express their learning about animal adaptations: drawing pictures, acting out animal behaviors, using simple words or gestures, or building with blocks to show animal habitats. This supports diverse learners and communication styles.

Zoom In / Zoom Out

1. Zoom In: Inside the pelican's throat pouch are tiny muscles that help squeeze out water while keeping fish inside. The bird's feathers have special oils that keep water from soaking in, helping the pelican stay warm and dry.

2. Zoom Out: Pelicans are part of a coastal ecosystem where they help control fish populations and their droppings provide nutrients for plants. They connect ocean food webs to land environments and are indicators of healthy marine ecosystems.

Discussion Questions

1. What do you notice about this bird's beak and how might it help the bird get food? (Bloom's: Analyze | DOK: 2)
2. Where do you think this pelican lives and why? (Bloom's: Apply | DOK: 2)
3. How is this bird the same or different from birds you see in your backyard? (Bloom's: Compare | DOK: 2)
4. What do you think would happen if this pelican had a tiny beak like a robin? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

1. Misconception: "The pelican's big beak is just for eating big fish"
   Clarification: The beak and throat pouch work together like a fishing net to catch many small fish at once, not just big ones

2. Misconception: "All birds live in the same places"
   Clarification: Different birds live in different habitats based on what their bodies can do and what food they eat

3. Misconception: "The pelican's beak is empty inside"
   Clarification: The throat pouch can stretch like a balloon to hold fish and water

Cross-Curricular Ideas

1. Math - Counting and Patterns: Count how many fish the pelican might catch in one day. Create simple patterns using pictures of pelicans and fish (pelican-fish-pelican-fish). Measure the length of the pelican's beak using non-standard units like blocks or paper clips.

2. ELA - Storytelling and Descriptive Language: Read books about pelicans and have students retell the story using their own words. Create a class book where each student draws a pelican and dictates one sentence about what they see. Practice descriptive words like "long," "big," "yellow," and "fluffy."

3. Art - Collage and Painting: Create pelican art using white paper, black paint, and yellow markers to match the bird's coloring. Make a large class mural of a coastal habitat with pelicans, fish, water, and rocks. Use natural materials like feathers, shells, and sand to create textured pelican pictures.

4. Social Studies - Animal Care and Community: Discuss how people can help protect pelicans and their ocean homes. Learn about different communities around the world that live near water where pelicans are found. Talk about jobs people have that help care for animals and nature.

STEM Career Connection

1. Marine Biologist: A scientist who studies animals and plants that live in the ocean and near the water. They watch pelicans and other sea creatures to learn how they live and help keep them healthy and safe. Average Annual Salary: $65,000

2. Wildlife Photographer: A person who takes pictures of wild animals like pelicans in their natural homes. They use cameras and patience to capture beautiful photos that help people learn about and care for animals. Average Annual Salary: $35,000

3. Zoo or Aquarium Worker: A person who takes care of pelicans and other animals in zoos and aquariums. They feed the birds, keep their habitats clean, and teach visitors about how these animals live. Average Annual Salary: $28,000

NGSS Connections

- Performance Expectation: K-LS1-1 - Use observations to describe patterns of what plants and animals need to survive
- Disciplinary Core Ideas: K-LS1.C - Animals need food, water, and air to live and grow
- Crosscutting Concepts: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

* Pelican: A large water bird with a long beak and stretchy throat pouch for catching fish
* Beak: The hard, pointed mouth part that birds use to get food
* Habitat: The place where an animal lives and gets everything it needs
* Adaptation: Special body parts or behaviors that help animals survive
* Prey: Animals that other animals hunt for food

External Resources

Children's Books:
- Pelican by Jill McDonnell
- About Birds: A Guide for Children by Cathryn Sill
- Beaks! by Sneed Collard III