

Photo Description



This brown and white bird is called a pelican. It has a very long beak with a big pouch underneath. The pelican is standing on a wooden post near the water.

Scientific Phenomena

The Anchoring Phenomenon is "How do pelicans use their special beak to catch fish?" This represents structural adaptation - the pelican's beak and throat pouch have evolved specifically for their feeding behavior. The large gular pouch can expand to hold both fish and water, then the pelican squeezes out the water before swallowing the fish. This specialized feeding structure allows pelicans to be successful fish-eating birds in coastal environments.

Core Science Concepts

1. Animal Body Parts and Functions - Pelicans have special body parts that help them survive, like their large beak and throat pouch for catching fish
2. Habitat Requirements - Pelicans live near water because that's where their food (fish) lives
3. Adaptation - The pelican's body parts are perfectly designed for their way of life
4. Animal Behaviors - Pelicans have specific ways of hunting and feeding that match their body structure

Pedagogical Tip:

Use the "Think-Pair-Share" strategy when discussing animal adaptations. Have students first think about what they notice about the pelican's beak, then discuss with a partner, and finally share with the class. This builds confidence and allows processing time.

UDL Suggestions:

Provide multiple ways to represent learning by using hand gestures to show how a pelican's pouch works, drawing labeled diagrams, and acting out pelican feeding behaviors. This supports different learning styles and helps students with varying abilities access the content.

Zoom In / Zoom Out

1. Zoom In: Inside the pelican's throat pouch are tiny muscles that can squeeze and contract to push water out while keeping fish inside, similar to how we use our cheek muscles.
2. Zoom Out: Pelicans are part of coastal food webs where they help control fish populations and their waste provides nutrients for plants and other animals in the ecosystem.

Discussion Questions

1. What do you notice about this pelican's beak that makes it different from other birds? (Bloom's: Analyze | DOK: 2)
2. Why do you think pelicans live near water instead of in forests? (Bloom's: Apply | DOK: 2)
3. How does the pelican's big pouch help it get food? (Bloom's: Understand | DOK: 1)
4. What would happen if a pelican had a tiny beak like a sparrow? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

1. Misconception: "Pelicans store food in their pouch like a lunch box"
Clarification: Pelicans use their pouch to catch fish and squeeze out water, but they swallow the fish right away rather than storing it.
2. Misconception: "All birds have the same type of beak"
Clarification: Different birds have different shaped beaks that match what they eat and where they live.

Cross-Curricular Ideas

1. Math - Measuring and Comparing - Have students measure the length of pelican beaks using string or rulers, then compare the measurements. Create a simple bar graph showing "long beaks" vs. "short beaks" among different bird types. This connects to measurement standards and data representation.
2. ELA - Descriptive Writing - Students write or dictate sentences describing what they observe about the pelican using adjectives (big, long, curved, shiny). Create a class "Pelican Description Wall" where students add their sentences and illustrations. This builds vocabulary and writing skills.
3. Art - Bird Sculpture and Collage - Students create 3D pelican models using clay, paper towel tubes, and craft materials, focusing on the distinctive pouch and beak. Display student-made pelicans around the classroom or in a "Coastal Animals Gallery."
4. Social Studies - Community Helpers - Connect to local wildlife rehabilitation centers or aquariums that care for pelicans. Invite a guest speaker or take a virtual field trip to learn how people help protect pelicans in their community.

STEM Career Connection

1. Wildlife Biologist - Wildlife biologists are scientists who study animals like pelicans in their natural homes. They watch what the birds eat, where they live, and how they stay healthy. They help protect animals and their habitats so they can survive. Average Annual Salary: \$67,000
2. Veterinarian - Veterinarians are doctors for animals. They care for sick and injured pelicans at wildlife centers and zoos, giving them medicine and checking their health. They use special tools to help birds feel better. Average Annual Salary: \$95,000
3. Oceanographer - Oceanographers study the ocean and the creatures that live in it, including pelicans and the fish they eat. They learn about water, waves, and how ocean animals depend on each other for food and survival. Average Annual Salary: \$65,000

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 - All animals need food in order to live and grow
- Crosscutting Concepts: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

- * Adaptation: A special body part or behavior that helps an animal survive
- * Habitat: The place where an animal lives and finds everything it needs
- * Beak: The hard, pointed mouth part of a bird
- * Pouch: A bag-like part under the pelican's beak that holds fish
- * Predator: An animal that hunts and eats other animals

External Resources

Children's Books:

- Pelican by Edith Thacher Hurd
- A Pelican's Life by Ellen Lawrence
- About Birds: A Guide for Children by Cathryn Sill