

## Photo Description



## Scientific Phenomena

This image represents the Anchoring Phenomenon of structural adaptation for survival. The pelican's oversized bill and expandable throat pouch are specialized structures that have evolved specifically for catching and storing fish. The long, straight bill acts like a spear for diving into water, while the flexible pouch can hold multiple fish and drain water before swallowing. This demonstrates how an animal's body parts are perfectly designed to help it get food and survive in its environment.

## Core Science Concepts

1. Animal Body Parts and Functions: Different animals have special body parts that help them survive, like the pelican's long beak for catching fish.
2. Habitat Requirements: Animals live in places that give them what they need - pelicans live near water because that's where their food (fish) lives.
3. Animal Behaviors: Pelicans have special ways of getting food, like diving into water and using their pouch to catch fish.

### Pedagogical Tip:

Use hand gestures and body movements when teaching about animal adaptations. Have students pretend to be pelicans by making their arms into a long beak and "diving" for fish. This kinesthetic approach helps first graders remember how body parts match functions.

### UDL Suggestions:

Provide multiple ways for students to show their understanding by offering choices: they can draw the pelican, act out how it catches fish, or build a model with clay. This supports different learning preferences and abilities while maintaining the same learning objective.

## Zoom In / Zoom Out

Zoom In: The pelican's throat pouch contains special muscles that can squeeze out water while keeping fish inside. The pouch can stretch to hold up to 3 gallons of water and fish - that's like holding 12 water bottles!

Zoom Out: Pelicans are part of a coastal ecosystem food web. They help control fish populations and their droppings provide nutrients for plants. When pelicans are healthy, it means the ocean environment is healthy too.

### Discussion Questions

1. "What do you notice about the pelican's beak that makes it different from other birds?" (Bloom's: Analyze | DOK: 2)
2. "How do you think the pelican's big pouch helps it get food?" (Bloom's: Apply | DOK: 2)
3. "What would happen if a pelican lived in a desert instead of near water?" (Bloom's: Evaluate | DOK: 3)
4. "What other animals have body parts that help them get food?" (Bloom's: Remember | DOK: 1)

### Potential Student Misconceptions

1. Misconception: "The pelican stores fish in its pouch for later, like a lunch box."  
Reality: Pelicans drain water from their pouch and swallow fish right away. The pouch is for catching, not storing.
2. Misconception: "All birds have the same kind of beak."  
Reality: Different birds have different shaped beaks that match what they eat and where they live.

### NGSS Connections

- Performance Expectation: 1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- Disciplinary Core Idea: 1-LS1.A - Structure and Function
- Crosscutting Concept: Structure and Function

### 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 that birds use to get food
- \* Pouch: A bag-like part under the pelican's beak that holds fish
- \* Predator: An animal that hunts other animals for food

### External Resources

Children's Books:

- Pelican by Julie Dunlap
- About Birds: A Guide for Children by Cathryn Sill
- Beaks! by Sneed Collard III

YouTube Videos:

- "How Do Pelicans Catch Fish?" - Shows slow-motion footage of pelican diving behavior: [https://www.youtube.com/watch?v=QNNI\\_uWmQXE](https://www.youtube.com/watch?v=QNNI_uWmQXE)
- "Animal Adaptations for Kids" - Educational video about how animal body parts help them survive: [https://www.youtube.com/watch?v=Kn1HF3oD\\_p4](https://www.youtube.com/watch?v=Kn1HF3oD_p4)