

Photo Description



This brown lizard is resting on a tree branch in its natural habitat. The lizard has detailed scales covering its body, a long tail, and golden-colored eyes that help it see clearly. Its brown and tan coloring helps it blend in perfectly with the tree bark around it.

Scientific Phenomena

The Anchoring Phenomenon demonstrated here is camouflage adaptation. This lizard's coloration and pattern closely match the tree bark, making it nearly invisible to predators and prey. This happens because over many generations, lizards with better camouflage survived longer and had more babies, passing on their protective coloring to their offspring. This is a perfect example of how animals have evolved specific traits that help them survive in their environment.

Core Science Concepts

1. Adaptive Coloration: The lizard's brown and tan scales match its tree habitat, providing protection from predators and helping it hunt successfully.
2. Body Structures for Survival: Observable features like scales for protection, clawed feet for gripping bark, and positioned eyes for detecting movement all serve specific survival functions.
3. Habitat Requirements: This arboreal (tree-dwelling) lizard has physical features perfectly suited for life in trees, including its body shape and gripping abilities.
4. Behavioral Adaptations: The lizard's stillness and positioning demonstrate how animals use behavior combined with physical traits for survival.

Pedagogical Tip:

When teaching about camouflage, have students practice being "nature detectives" by looking for hidden animals in other photos. This builds observation skills while reinforcing the concept that camouflage is everywhere in nature.

UDL Suggestions:

Provide multiple ways for students to demonstrate understanding of camouflage by offering choices: drawing their own camouflaged animal, acting out predator-prey scenarios, or creating a digital presentation about animal hiding strategies.

Zoom In / Zoom Out

1. Zoom In: At the cellular level, specialized cells called chromatophores contain pigments that create the lizard's coloration. These cells developed over time through genetic changes that improved survival rates.

2. Zoom Out: This lizard is part of a larger forest ecosystem where camouflage creates a balance between predators and prey. Many species in the same habitat use similar camouflage strategies, creating an interconnected web of survival adaptations.

Discussion Questions

1. What body parts help this lizard survive in trees, and how does each part help? (Bloom's: Analyze | DOK: 2)
2. If this lizard lived in a desert instead of on trees, how might it look different? (Bloom's: Synthesize | DOK: 3)
3. Why do you think the lizard's eyes are positioned on the sides of its head rather than in front? (Bloom's: Evaluate | DOK: 2)
4. What evidence can you observe that shows this animal is well-adapted to its environment? (Bloom's: Apply | DOK: 2)

Potential Student Misconceptions

1. Misconception: "The lizard chose to be brown to match the tree."
Reality: Animals don't choose their colors. Camouflage develops over many generations through natural selection.
2. Misconception: "All lizards look the same."
Reality: Lizards have many different colors, sizes, and features depending on where they live and what they need to survive.
3. Misconception: "Camouflage only helps animals hide from enemies."
Reality: Camouflage helps both predators sneak up on prey and prey animals hide from predators.

Cross-Curricular Ideas

1. Math - Measurement & Patterns: Have students measure the lizard's body parts (head length, tail length, body length) using a ruler or measuring tape. Then create bar graphs comparing measurements of different lizard species. Students can look for patterns in how body proportions change based on habitat type.
2. ELA - Descriptive Writing: Ask students to write a detailed paragraph describing the lizard from the perspective of a small insect that just spotted it on the tree branch. This combines creative writing with scientific observation skills, encouraging students to use sensory words (rough bark, warm sun, sharp claws) while maintaining scientific accuracy.
3. Art - Camouflage Design Project: Have students create their own camouflaged animal by drawing or painting an animal on a textured background (bark rubbings, leaf patterns, sand paper). This hands-on art activity reinforces understanding of how form follows function and helps students see camouflage as both a scientific concept and an artistic principle.
4. Social Studies - Animal Habitats Around the World: Research where different types of lizards live (deserts, rainforests, mountains) and create a world map showing their locations. Students can compare how geography and climate influence which animals live in different regions and how those animals adapt to their specific environments.

STEM Career Connection

1. Wildlife Biologist: Wildlife biologists study animals like lizards in their natural habitats to understand how they survive and adapt. They observe animals, take photos and notes, and share what they learn to help protect endangered species. Many wildlife biologists work outdoors in forests, deserts, and other ecosystems. Average Salary: \$63,000 per year

2. Zoo or Aquarium Curator: Zoo curators care for animals in captivity and design habitats that match where animals live in nature. They use their knowledge of animal adaptations and needs to create safe, healthy environments where visitors can learn about wildlife. Average Salary: \$58,000 per year

3. Herpetologist: A herpetologist is a scientist who specializes in studying reptiles and amphibians like lizards, snakes, frogs, and salamanders. They research how these animals adapt to different environments, what they eat, and how to protect them from extinction. Some herpetologists even discover new species! Average Salary: \$65,000 per year

NGSS Connections

- Performance Expectation: 4-LS1-1 - Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction.
- Disciplinary Core Ideas: 4-LS1.A - Plants and animals have both internal and external structures that serve various functions in growth, survival, behavior, and reproduction.
- Crosscutting Concepts: Structure and Function - The way an object is shaped or structured determines many of its properties and functions.
- Science and Engineering Practices: Constructing explanations based on evidence from observations.

Science Vocabulary

- * Camouflage: When an animal's colors or patterns help it blend in with its surroundings.
- * Adaptation: A special feature that helps an animal survive in its environment.
- * Scales: Small, overlapping pieces of skin that protect reptiles' bodies.
- * Habitat: The natural place where an animal lives and finds everything it needs.
- * Predator: An animal that hunts and eats other animals.
- * Arboreal: Living in or spending most time in trees.

External Resources

Children's Books:

- What Do You Do With a Tail Like This? by Steve Jenkins and Robin Page
- Animal Camouflage by Janet McDonnell
- Hidden Animals by Selma Lola Chambers