Animal Behavior

Life Science | Lesson Guide

4th Grade

Photo Description

This image shows a bright green lizard resting on a piece of tree bark. You can see the lizard's detailed scales covering its body, its alert eye, and its long tail. The lizard's green color helps it blend in with leaves and plants in its natural environment, which is called camouflage.

Scientific Phenomena

Anchoring Phenomenon: Why is this lizard green, and how does its body help it survive?

This lizard displays structural adaptation and camouflage—physical features that help animals survive in their environment. The bright green coloring happens because of pigments (natural colors) in the lizard's skin. This green color is NOT random; it evolved over many generations because lizards with green coloring were better hidden from predators on green plants and leaves. Animals that are hard to see are more likely to survive and have babies, passing this trait to the next generation. This is a direct result of natural selection and environmental adaptation.

Core Science Concepts

* Structural Adaptations: Physical features of an animal's body that help it survive. The lizard's green color, scales, and body shape are all adaptations for life in trees and on vegetation.

* Camouflage: A type of adaptation where an animal's color, pattern, or shape matches its environment, making it harder for predators to see it. The green lizard blends with leaves and branches.

* Animal Behavior & Survival: Animals exhibit behaviors (like staying still or hiding) that work together with their body structures to help them survive and find food.

* Sensory Adaptations: The lizard's visible eye, positioned on the side of its head, allows it to see predators and prey while remaining still—an important survival advantage.

Pedagogical Tip:

When teaching adaptations, help students distinguish between structural (body features) and behavioral (actions) adaptations. Ask: "Is that something the lizard's BODY has, or something the lizard DOES?" This clarification prevents misconceptions about how adaptations work.

UDL Suggestions:

Provide multiple means of representation: Show this image alongside photos of the same lizard species in different environments (sandy areas, forest floors) to help students see how the same green color works differently depending on habitat. Also include a diagram labeling the lizard's body parts. For students who process language differently, create a word bank with images paired to vocabulary terms before the lesson.

Discussion Questions

1. Why do you think this lizard is green instead of red or blue? (Bloom's: Analyze | DOK: 2)
   This question encourages students to connect color to environment and think about cause-and-effect relationships.

2. If this lizard moved to a sandy desert, would its green color still help it hide from predators? Explain your thinking. (Bloom's: Evaluate | DOK: 3)
   This higher-order question asks students to apply their understanding to a new scenario and defend their reasoning.

3. What other animals have you seen that use camouflage to hide? How is their hiding strategy similar to or different from this lizard's? (Bloom's: Analyze | DOK: 2)
   This connects the concept to students' prior knowledge and builds understanding through comparison.

4. How do you think this lizard's scales help it survive? (Bloom's: Understand | DOK: 1)
   This foundational question helps students observe and describe a visible structural adaptation.

Extension Activities

1. Camouflage Hunt: Hide pictures of various animals (some with camouflage, some brightly colored) around the classroom. Have students find the animals and sort them into two groups: "Easy to See" and "Hard to See." Discuss why camouflage helps survival and brainstorm other hiding strategies animals use.

2. Design Your Own Animal: Provide students with a specific habitat (rainforest, desert, snow, ocean). Have them draw and color an imaginary animal with adaptations suited to that environment. Students should label their structural adaptations and explain how each one helps the animal survive.

3. Lizard Behavior Observation: If possible, show a short video of a lizard moving, basking, hunting, or hiding. Have students use a simple observation chart to record what behaviors they see and predict WHY the lizard does each behavior (e.g., "The lizard stayed very still—maybe to hide from predators").

NGSS Connections

Performance Expectation:
4-LS1.A | Structure and Function
"All organisms have external structures that serve various functions in growth, survival, and reproduction."

Disciplinary Core Ideas:
- 4-LS1.A (Structure and function of organisms)
- 4-LS4.B (Natural selection and variation in populations)

Crosscutting Concepts:
- Structure and Function
- Cause and Effect

Science Vocabulary

* Adaptation: A special feature or behavior of an animal that helps it survive and live in its environment.

* Camouflage: When an animal's color or pattern matches its surroundings so it is hard to see.

* Scales: Small, flat, overlapping plates that cover a reptile's skin and protect its body.

* Predator: An animal that hunts other animals for food.

* Prey: An animal that is hunted by other animals for food.

* Natural Selection: The process where animals with helpful traits are more likely to survive and have babies that inherit those same traits.

External Resources

Children's Books:
- Chameleon, Chameleon by Joy Cowley (illustrator: Nic Bishop)—A rhythmic story about a chameleon's color changes and camouflage.
- The Lizard and the Sun / La Lagartija y el Sol by Alma Flor Ada—A folktale celebrating diverse animals and nature.
- What Do You Know About Reptiles? by Buffy Silverman—A nonfiction picture book perfect for building background knowledge.

YouTube Videos:
- "Animal Camouflage for Kids" (National Geographic Kids, ~3 minutes) — Engaging video showing multiple animals using camouflage in nature. https://www.youtube.com/watch?v=Yx1wVJKfqFs
- "Green Tree Python Facts for Kids" (National Geographic Kids, ~2 minutes) — Close-up footage of a bright green reptile, perfect for visual learners wanting to see adaptation in action. https://www.youtube.com/watch?v=8UiC4YOFQTE

Teacher Note: This lesson naturally scaffolds toward Fourth Grade standards on animal structures and adaptations while building curiosity about the natural world. Students will benefit from hands-on observation, discussion, and creative application of concepts to new scenarios.