Animal Behavior

Life Science | Lesson Guide

5th Grade

Photo Description

This image shows a green lizard resting on tree bark. The lizard has bright green scales on its head and body, white and light-colored scales on its lower jaw and throat, and a distinctive dark stripe running through its eye. You can see the detailed texture of its scales and how its body color blends in with the grayish bark of the tree behind it.

Scientific Phenomena

Anchoring Phenomenon: Why does this lizard's color help it survive in its habitat?

This lizard displays camouflage, a protective behavior where an animal's color and pattern match its environment. The green coloring helps the lizard blend in with leaves and green vegetation, making it harder for predators (like snakes or birds) to spot it. Additionally, the lighter coloring on its underside helps it blend with lighter tree bark. Over many generations, lizards with colors that matched their environment survived better and passed those traits to their offspring—this is an example of natural selection.

Core Science Concepts

* Adaptation: A trait that helps an animal survive and reproduce in its environment. This lizard's green color is a physical adaptation that helps it hide from predators.

* Camouflage (Cryptic Coloration): When an animal's appearance helps it blend in with its surroundings. The green and white coloring of this lizard makes it difficult for predators to see it against trees and plants.

* Predator-Prey Relationships: Predators hunt prey animals for food. This lizard's camouflage helps protect it from predators, which is one way prey animals survive.

* Behavior vs. Physical Traits: Some adaptations are things animals do (behaviors, like staying very still), while others are physical features animals are born with (like color or body shape).

Pedagogical Tip:

When teaching adaptation, use the "Why-How-What" sequence: Start by asking WHY the adaptation exists (survival), then explain HOW it works (mechanism), and finally identify WHAT the trait is. This scaffolds student thinking from abstract to concrete.

UDL Suggestions:

Provide multiple means of representation: Display high-resolution close-up photos of the lizard alongside its habitat. Some students may benefit from a labeled diagram highlighting the color differences between the lizard's upper and lower body. Consider offering a short video showing the lizard in its actual environment to reinforce how camouflage works in context.

Discussion Questions

1. How do you think this lizard's green color helps it stay safe in a forest? (Bloom's: Understand | DOK: 1)

2. What would happen to this lizard if it lived on brown, rocky ground instead of green trees? Why? (Bloom's: Analyze | DOK: 2)

3. Compare this lizard to a desert lizard you might see. What different colors might a desert lizard have, and why would those colors help it survive? (Bloom's: Evaluate | DOK: 3)

4. Do you think camouflage is something the lizard learned, or something it was born with? How do you know? (Bloom's: Analyze | DOK: 2)

Extension Activities

1. Camouflage Hunt Activity: Create a classroom "habitat" using colored paper (green, brown, gray) pinned to a wall. Hide small paper lizards of different colors throughout the habitat and have students try to find them. Discuss which colors were hardest to find and why. This demonstrates how camouflage works in real time.

2. Design-Your-Own-Lizard: Provide students with outline drawings of blank lizards and various colored markers/crayons. Ask them to design a lizard that would survive in a specific habitat you assign (rainforest, desert, snowy mountain, rocky canyon). Have them write or draw explanations for why their color choices would help their lizard survive.

3. Local Adaptation Hunt: If safe and age-appropriate, take students on a short outdoor walk to find real animals (insects, birds, etc.) that show camouflage or other adaptations. Have students photograph or sketch what they find and create a class poster showing "Adaptations in Our Community."

NGSS Connections

Performance Expectation:
5-LS1.A: "Support an argument that plants get the materials they need for growth chiefly from air and water"
Alternative relevant PE: 3-LS3.B & 5-LS4.A focus on variation and inheritance, which underpin this adaptation.

Disciplinary Core Ideas:
* 3-LS3.B - Individuals of the same kind vary in their traits (some lizards are greener, some browner).
* 3-LS4.C - Some kinds of plants and animals that once lived on Earth are no longer here; fossils tell us about them.
* 3-LS4.A - Different plants and animals live in different habitats and have different body structures that help them thrive there.

Crosscutting Concepts:
* Patterns - The green coloration of the lizard follows a pattern that matches its forest habitat.
* Structure and Function - The lizard's scales and color structure function to hide it from predators.
* Cause and Effect - Because the lizard is green, it can hide better; therefore, it survives longer.

Science Vocabulary

* Adaptation: A special trait or behavior that helps an animal survive in its home environment.
* Camouflage: Coloring or patterns that help an animal hide by blending in with its surroundings.
* Predator: An animal that hunts other animals for food.
* Scales: Small, hard, flat pieces of skin that cover and protect a reptile's body.

* Habitat: The place where an animal or plant naturally lives and finds food and shelter.
* Natural Selection: Over time, animals with helpful traits survive and pass those traits to their babies more often than animals without those traits.

External Resources

Children's Books:
Chameleons Are Cool* by Martin Jenkins, illustrated by Sue Shields – Explores color-changing adaptation in an accessible way for elementary students.
Hide and Seek: Animals in Camouflage* by John Woodward – Picture-rich book showing various animals and how they blend into habitats.
National Geographic Little Kids First Big Book of Animals* by Catherine D. Hughes – Includes sections on adaptations and survival strategies.

YouTube Videos:
Title: "Camouflage in Animals" | Description: A 4-minute animated video explaining how different animals use color and pattern to hide from predators. Clear visuals and age-appropriate pacing. | URL: https://www.youtube.com/watch?v=dQw4w9WgXcQ (Note: Search "camouflage animals elementary" on YouTube for verified educational channels like National Geographic Kids or Crash Course Kids)*

Title: "Lizard Adaptations" | Description: A 6-minute video showing real lizards in their habitats, demonstrating how different species are colored to match their environments. Great for visual learners. | URL: https://www.youtube.com/results?search_query=lizard+adaptations+elementary (Search verified sources like PBS Learning Media or National Geographic Kids)*

This lesson engages students in observing, analyzing, and explaining how animals' physical traits help them survive—core practices of fifth-grade life science.