Anole

Life Science | Lesson Guide

1st Grade

Photo Description

A brown lizard sits on a tree branch. The lizard has bumpy skin and a long tail. Its eye is bright yellow and it looks very still.

Scientific Phenomena

This image represents the Anchoring Phenomenon of animal camouflage and adaptation. The lizard's brown, textured skin closely matches the bark of the tree, making it harder for predators to see and for prey to notice it approaching. This coloration and pattern developed over many generations through natural selection, where lizards with better camouflage were more likely to survive and reproduce. The lizard's ability to remain motionless also enhances this survival strategy.

Core Science Concepts

1. Animal Adaptations: The lizard's skin color and texture help it blend in with its environment to stay safe from predators and catch food.

2. Basic Needs of Animals: Like all animals, this lizard needs food, water, shelter, and air to survive. The tree provides shelter and a place to hunt for insects.

3. Observable Animal Features: Scientists can observe and describe the lizard's body parts (eyes, tail, legs, skin) and how each part helps the animal survive.

4. Habitat Requirements: The lizard lives in a place that meets all its needs - trees provide hiding spots, surfaces for hunting, and protection from weather.

Pedagogical Tip:

Use the "I Notice, I Wonder, It Reminds Me Of" thinking routine when first showing this image. This helps students make observations before jumping to conclusions and connects to their prior experiences with animals.

UDL Suggestions:

Provide multiple ways for students to share observations - drawing, verbal descriptions, or acting out lizard movements. Consider having tactured materials like bark or lizard models for students who benefit from tactile learning experiences.

Zoom In / Zoom Out

1. Zoom In: The lizard's skin is made up of tiny scales that overlap like roof shingles. These scales protect the lizard and help create the textured pattern that matches tree bark. The scales also help prevent water loss from the lizard's body.

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2. Zoom Out: This lizard is part of a larger forest ecosystem where many animals use camouflage strategies. The health of the entire forest depends on predator-prey relationships, and camouflage helps maintain the balance between animals that hunt and animals that are hunted.

Discussion Questions

1. What do you notice about how the lizard's skin looks compared to the tree bark? (Bloom's: Analyze | DOK: 2)

2. How do you think the lizard's skin color helps it stay safe? (Bloom's: Apply | DOK: 2)

3. What other animals have you seen that match their surroundings? (Bloom's: Remember | DOK: 1)

4. If this lizard lived in a snowy place instead of on trees, what color do you think it might be and why? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

1. Misconception: "The lizard chose to be brown to match the tree."
   Reality: Animals don't choose their colors. The lizard was born with coloring that helps it survive because its parents had similar helpful traits.

2. Misconception: "All lizards look exactly the same."
   Reality: Different types of lizards have different colors, sizes, and features depending on where they live and what they need to survive.

3. Misconception: "The lizard is sleeping because it's not moving."
   Reality: Many animals stay very still when they sense danger or when they are hunting, even when they are wide awake.

Cross-Curricular Ideas

1. ELA - Descriptive Writing & Sensory Language: Have students write or dictate simple sentences describing the lizard using sensory words. "The lizard's skin feels bumpy. It looks brown like the tree." Create a class book where each student contributes one page with a drawing and one sentence about the lizard's appearance or habitat.

2. Math - Measurement & Comparison: Measure the length of the lizard's tail using non-standard units (paperclips, blocks, or hand spans). Compare the lizard's size to other classroom objects. Create a simple bar graph showing "Animals We Know" and their approximate sizes (small, medium, large).

3. Art - Camouflage Collage & Texture Exploration: Students create their own camouflaged animal by gluing torn pieces of bark, leaves, and brown paper onto white paper to create a hiding lizard. Explore different textures by rubbing crayons over tree bark rubbings, then compare these textures to the lizard's scales.

4. Social Studies - Animal Homes & Habitats Around the World: Discuss where lizards live (different countries and climates). Create a simple map showing desert, forest, and grassland habitats. Talk about how people and animals both need homes that keep them safe and warm.

STEM Career Connection

1. Wildlife Biologist: A wildlife biologist studies animals in nature to learn how they live, what they eat, and how they survive. They might spend time in forests watching lizards and other animals to understand their behaviors and help protect them. These scientists help make sure animals have safe places to live.

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- Average Annual Salary: $65,000

2. Zookeeper: A zookeeper takes care of animals like lizards in zoos and animal facilities. They feed the animals, clean their habitats, and make sure they stay healthy and happy. Zookeepers learn all about what different animals need to survive.
- Average Annual Salary: $32,000

3. Herpetologist: A herpetologist is a special scientist who studies reptiles like lizards, snakes, and turtles. They learn about how these animals live, what they eat, where they come from, and how to help protect them when they are in danger.
- Average Annual Salary: $58,000

NGSS Connections

Performance Expectation: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and animals use their external parts to help them survive, grow, and meet their needs.

Disciplinary Core Ideas:
- 1-LS1.A - All organisms have external parts that they use to perform daily functions.

Crosscutting Concepts:
- Structure and Function - The shape and stability of structures are related to their function.

Science Vocabulary

* Camouflage: When an animal's colors or patterns help it blend in with where it lives
* Adaptation: A special feature that helps an animal survive in its home
* Predator: An animal that hunts other animals for food
* Habitat: The place where an animal lives and finds everything it needs
* Scales: Small, flat pieces that cover and protect a lizard's skin

External Resources

Children's Books:
- What Do You Do With a Tail Like This? by Steve Jenkins and Robin Page
- Chameleon, Chameleon by Joy Cowley
- Animal Camouflage by Janet McDonnell

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