

## Photo Description



This image shows a bright green lizard resting on tree bark. You can see its bumpy skin covered in tiny scales, its alert eye, and its long tail. The lizard's green color helps it blend in with the trees and leaves around it, making it hard for other animals to spot it.

## Scientific Phenomena

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

This lizard displays camouflage (also called protective coloration), a survival strategy where an animal's appearance matches its environment. The lizard's bright green color evolved over many generations because lizards that were harder to see by predators lived longer and had more babies. The lizard isn't consciously choosing to be green—its body naturally produces green pigments in its skin cells. This adaptation helps the lizard hide from predators like snakes and birds while it hunts for insects. The lizard also uses its color to communicate with other lizards and to absorb heat from the sun more efficiently on light-colored branches.

## Core Science Concepts

- \* **Camouflage and Adaptation:** Animals have physical features (like color, shape, and texture) that help them survive in their environment. Over time, animals with helpful features survive better and pass those features to their offspring.
- \* **Structure and Function:** The lizard's small scales, bumpy skin texture, and green coloring all work together to help it hide, move, and survive in its forest habitat.
- \* **Predator-Prey Relationships:** This lizard is both a predator (it hunts insects) and prey (other animals hunt it). Its camouflage helps it survive encounters with predators.
- \* **Animal Behavior and Habitat:** Lizards are reptiles that need warm environments and hide in places like trees, rocks, and logs to stay safe and regulate their body temperature.

### Pedagogical Tip:

When teaching about camouflage, use the "I Spy" game strategy: show students the lizard photo and ask "Can you find the lizard?" before revealing where it is. This builds genuine curiosity and makes students experience firsthand why camouflage matters. This concrete experience makes the concept stick much better than simply explaining it.

### UDL Suggestions:

Provide multiple ways for students to engage with this concept: (1) Visual learners can sort pictures of animals by their camouflage colors, (2) Kinesthetic learners can participate in a "predator-prey tag" game where they wear colored clothing to blend into the classroom, and (3) Verbal learners can discuss why the lizard's color is better than, for example, being bright red. This addresses varied learning preferences and abilities.

### Discussion Questions

1. Why do you think this lizard is green instead of red or blue? (Bloom's: Analyze | DOK: 2)  
Students should reference the tree bark and leaves in the background and think about how the color helps it hide.
2. What would happen if this lizard lived on gray rocks instead of green trees? (Bloom's: Evaluate | DOK: 3)  
Students predict that a green lizard would be more easily seen and might be eaten more often; prompt them to think about what color might help it survive on rocks.
3. How do you think this lizard's color helps it hunt for food? (Bloom's: Analyze | DOK: 2)  
Students should recognize that insects won't see the hidden lizard coming, giving it an advantage.
4. If all the trees turned brown and lost their leaves, how might the lizard change over many, many years? (Bloom's: Evaluate | DOK: 3)  
This introduces evolution; students might suggest the lizard's color could slowly change, or that only brown lizards would survive and have babies.

### Extension Activities

1. Camouflage Hunt Game: Hide small paper cutouts of various colored lizards (green, red, yellow, blue) on a bulletin board or classroom wall covered with colored paper. Have students search for the lizards and discuss which colors were easiest/hardest to find and why. Connect this to real camouflage by explaining that predators in nature play this "hunt" game for survival.
2. Design Your Own Lizard: Give students colored paper, markers, and craft materials to design a lizard adapted to a specific environment (desert, snow, forest, coral reef). Students should choose colors and patterns that match their environment and explain in 2-3 sentences why their lizard would survive there. Display these with the original photo to compare.
3. Predator-Prey Observation Journal: Take the class outside to observe insects, birds, or other small animals. Have students sketch what they see and identify one way each animal's appearance helps it hide, hunt, or survive. Record observations in a simple science journal to build observational skills and connect camouflage to real animals.

### NGSS Connections

Performance Expectation:

3-LS4-2: Use evidence to construct an explanation for how the variations in characteristics among individuals of the same species may provide advantages in surviving, finding mates, and reproducing.

Disciplinary Core Ideas:

- \* 3-LS4.B - Natural selection and adaptations
- \* 3-LS4.D - Biodiversity and humans
- \* 3-LS1.A - Structure and function (body parts help animals survive)

Crosscutting Concepts:

- \* Structure and Function - The lizard's green color and scaled skin structure enable survival functions
- \* Cause and Effect - Predators cause selective pressure that favors well-camouflaged lizards
- \* Patterns - Similar lizards in similar environments often show similar green coloring patterns

## Science Vocabulary

- \* Camouflage: When an animal's color or pattern helps it blend in with its surroundings so other animals don't see it.
- \* Adaptation: A feature that helps an animal survive in its environment, like green skin or sharp claws.
- \* Predator: An animal that hunts and eats other animals.
- \* Prey: An animal that is hunted and eaten by other animals.
- \* Reptile: A cold-blooded animal with dry, scaly skin, like lizards, snakes, and turtles.
- \* Environment: Everything around an animal, including plants, rocks, weather, and other animals.

## External Resources

### Children's Books:

- The Mixed-Up Chameleon\* by Eric Carle — A fun story about a chameleon that changes colors and learns accepting itself
- Animals in Camouflage\* by Ginjer L. Clarke — Non-fiction picture book showing many animals and how they hide
- What Color Is Camouflage?\* by Carolyn Otto — Explores how different animals use color to survive in nature

### YouTube Videos:

- \* "Camouflage in Animals" (National Geographic Kids) — A 3-minute video showing amazing examples of animal camouflage with clear explanations. <https://www.youtube.com/watch?v=gPvR5jCWUU>
- \* "How Do Animals Use Camouflage?" (Crash Course Kids) — An engaging 4-minute video explaining why animals have camouflage and showing real examples. <https://www.youtube.com/watch?v=0ZkxJpZHhFU>