

Photo Description



This image shows a small lizard resting on dark soil surrounded by decomposing wood, leaves, and organic material. The lizard's bumpy, grayish-brown skin helps it blend in with its surroundings. You can see the lizard's eye, head, and body clearly positioned in its natural ground habitat where it hunts for food and finds shelter.

Scientific Phenomena

Anchoring Phenomenon: Why do some animals live on the ground?

This image captures an organism in its natural habitat—a critical concept for Third Grade life science. The lizard is camouflaged (hidden by its coloring) because it lives on sandy, rocky ground. This is an example of adaptation, where animals develop special traits that help them survive in their specific environment. The lizard's coloring, body shape, and behavior (staying low to the ground) are all adaptations that allow it to hunt insects, avoid predators, and thrive in this soil-based habitat.

Core Science Concepts

1. Habitats and Organisms: Animals live in places (habitats) that provide food, water, shelter, and space. This lizard's habitat includes soil, decomposing wood for shelter, and insects for food.
2. Camouflage as Adaptation: The lizard's coloring matches its environment, making it harder for predators to see it. This is one way animals are specially suited to their homes.
3. Decomposition and Nutrient Cycling: The decaying wood and leaves visible in the soil break down over time, returning nutrients to the earth. This supports plant growth, which feeds the insects the lizard eats.
4. Food Chains and Energy: The lizard eats insects that feed on plants and decaying matter. Energy flows from the soil and plants → insects → lizard, showing how organisms depend on each other.

Pedagogical Tip:

Help students make the connection between what they observe (the lizard's brown color matching brown soil) and why it matters (survival). Use think-pair-share: "Why might it be helpful for a lizard to look like dirt?" This builds critical thinking before introducing the formal term "adaptation."

UDL Suggestions:

Representation: Provide a labeled diagram of a lizard showing its adaptations (tough skin, camouflage coloring, small size). Action & Expression: Allow students to create a habitat diorama or draw their own ground-dwelling animal with camouflage coloring. Engagement: Connect to students' lives by asking them to spot camouflaged animals in photos or on a nature walk.

Zoom In / Zoom Out

Zoom In: Microscopic Level

If we could shrink down and look at the lizard's skin under a microscope, we'd see thousands of tiny bumps and scales! These scales are made of dead skin cells that protect the lizard like armor. The bumpy texture also helps the lizard grip the soil and hide better. Deep inside the lizard's body, special cells sense heat from the sun, which helps the lizard know when to move to sunny or shady spots to stay warm or cool.

Zoom Out: Ecosystem Level

This lizard is part of a much bigger community called a ground ecosystem. In this ecosystem, the lizard connects many living things: it eats insects (who eat decomposing plants), and the lizard's droppings become nutrients that help new plants grow. Bigger predators like birds and snakes hunt the lizard, and when the lizard dies, decomposers break down its body, returning nutrients to the soil. This shows how every organism—from tiny bacteria to the lizard—depends on all the others to survive.

Discussion Questions

1. How does the lizard's color help it survive on the ground? (Bloom's: Understand | DOK: 1)
2. Why do you think this lizard lives in soil and dirt instead of in trees or water? (Bloom's: Analyze | DOK: 2)
3. If this lizard were bright blue instead of brown, what might happen to it? Why? (Bloom's: Evaluate | DOK: 3)
4. What other animals might live in this same habitat, and what would they eat or need to survive? (Bloom's: Synthesize | DOK: 3)

Potential Student Misconceptions

Misconception 1: "The lizard is brown because it wants to hide."

Scientific Clarification: The lizard didn't choose its color or decide to hide. Over many, many years, lizards with brown coloring were better at hiding from predators, so more of them survived and had babies. Their babies inherited the brown color. This happened naturally over time, not by choice—it's called natural selection.

Misconception 2: "Decomposition is just dirt getting dirty."

Scientific Clarification: Decomposition is actually a very important job done by tiny living things (bacteria and fungi) that we can't see. These microscopic organisms break down dead wood and leaves into smaller and smaller pieces, turning them into nutrient-rich soil. Without decomposition, dead things would pile up forever, and nothing could grow!

Misconception 3: "The lizard could live anywhere—in water, in trees, or on the ground—it just chose the ground."

Scientific Clarification: Different types of lizards have adaptations that make them suited for specific habitats. This ground lizard has a flat body, short legs, and camouflage coloring that work perfectly for soil. It could not survive well in water or high in trees because its body isn't adapted for those places. Animals are specially built for their own habitats.

Extension Activities

1. Camouflage Hunt: Create a "habitat board" by gluing colored paper (brown, tan, green) to a poster. Hide small colored paper cutouts of animals. Have students find which animals are easiest/hardest to see, then discuss why camouflage helps survival. Record results in a chart.

2. Habitat in a Shoebox: Students build a ground-dwelling habitat diorama using a shoebox, soil, decomposing wood pieces (bark, twigs), and craft materials. They can add a model lizard or insect and label the parts that help organisms survive there.

3. Nature Detective Walk: Take students on a supervised outdoor exploration to find lizards, insects, or other ground-dwelling creatures (if available in your region). Photograph or sketch what they find and discuss: Where did you find it? What does it eat? How is it adapted to that spot?

Cross-Curricular Ideas

Math Connection: Camouflage Probability

Create a simple math activity where students place colored paper dots (representing insects or lizards) on differently colored backgrounds (brown soil, green plants, etc.). Have students count and predict: "Which colored dot is easiest to find on brown paper? How many can you spot in 10 seconds?" Graph the results to show that camouflage affects how easily predators find prey.

ELA Connection: Animal Diary or Letter

Have students write a short diary entry or letter from the lizard's perspective, describing a day in the soil habitat. "Dear Friend, Today I found three delicious insects to eat. I stayed very still so the bird wouldn't see me..." This builds empathy and helps students synthesize their understanding of the lizard's life and adaptations in narrative form.

Social Studies Connection: Human Habitats vs. Animal Habitats

Compare how humans and animals are adapted to different habitats. Discuss: "Humans wear clothes to stay warm or cool. Lizards have scales. Humans build houses for shelter. Lizards use holes in the soil." Create a Venn diagram showing how humans and lizards meet their needs differently based on their environments.

Art Connection: Camouflage Painting and Collage

Students create their own camouflaged animal using collage materials (torn paper, leaves, twigs, sand) on a background that matches their chosen habitat. Encourage them to blend colors and textures so their creature "disappears" into the habitat. Display student work and have classmates try to find the hidden animals—a fun, hands-on way to practice camouflage concepts.

STEM Career Connection

Wildlife Biologist

A wildlife biologist is a scientist who studies animals like lizards in their natural homes. They observe how animals behave, what they eat, where they live, and how they stay safe. Wildlife biologists might spend time in forests, deserts, or near water, taking notes and photos of animals. They help protect animals and their habitats so they can survive. Average Salary: \$65,000–\$75,000 per year

Ecologist

An ecologist studies how living things (plants, animals, insects, and microorganisms) work together in nature. They look at habitats like the soil environment in this photo and ask questions like: "What eats what? How do nutrients move through the soil? How does decomposition work?" Ecologists use science to help people understand and protect nature. Average Salary: \$68,000–\$78,000 per year

Soil Scientist (Pedologist)

A soil scientist studies dirt! This might sound silly, but soil is one of the most important things on Earth. Soil scientists learn what makes good soil for growing plants, how decomposition happens, and how soil supports animal habitats. They test soil samples, study the tiny creatures that live in soil, and help farmers and gardeners grow healthier plants. Average Salary: \$62,000–\$72,000 per year

NGSS Connections

Performance Expectation:

3-LS1.B Structure and Function: "All organisms have external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and seek, find, and take in food, water, and air."

Disciplinary Core Ideas:

- 3-LS1.A—All living things are made of cells and have different body structures that serve different functions
- 3-LS1.B—Animals have body parts that help them survive in their habitats
- 3-LS4.C—Organisms vary and have different traits; some traits help them survive better in their environment

Crosscutting Concepts:

- Structure and Function—The lizard's body parts (skin texture, coloring, eye placement) serve specific functions for survival
- Adaptation—Animals develop traits over time that match their environments

Science Vocabulary

- * Habitat: The place where an animal or plant lives and finds everything it needs to survive.
- * Adaptation: A special body part or behavior that helps an animal survive in its habitat.
- * Camouflage: Coloring or patterns that help an animal hide by blending in with its surroundings.
- * Decompose: When dead plants and animals break down and turn into soil over time.
- * Predator: An animal that hunts and eats other animals.
- * Prey: An animal that is hunted and eaten by another animal.

External Resources

Children's Books:

- Lizards by Gail Gibbons (Illustrated nonfiction about lizard habitats and adaptations)
- Who Lives Here? Pond Life by Shelley Rotner and Sheila Kelly (Explores different habitats and the animals within them)
- The Lizard and the Sun by Alma Flor Ada (Folktale connecting animals to their environments)

Note: This lesson builds foundational understanding of adaptations and habitats while directly connecting to observable evidence in the photo. Students should leave with a clear answer to the anchoring question: Animals have special body parts and colors that help them survive in the places where they live.