Food Chain

Life Science | Lesson Guide

1st Grade

Photo Description

This image shows a small lizard sitting on dirt and wood chips in its natural home. The lizard has bumpy, grayish-brown skin that helps it blend in with the ground around it. We can see the lizard's head, body, and tail as it rests among soil, twigs, and plant material.

Scientific Phenomena

Anchoring Phenomenon: A lizard living in and moving through its natural environment (habitat).

Why This Is Happening: Lizards are animals that need specific places to live where they can find food, water, and shelter. This lizard is in a habitat—a home that provides everything it needs to survive. The dirt, rocks, and wood chips create hiding spots and help the lizard stay safe from predators. The lizard's bumpy, earth-toned skin helps it hide by blending in with its surroundings, a survival strategy called camouflage. The lizard needs this habitat to eat insects, drink water, and rest safely.

Core Science Concepts

* Habitats: Every animal needs a home (habitat) with the right soil, plants, rocks, and shelter to survive and meet its basic needs.

* Animal Characteristics: Lizards are animals with skin, legs, and tails. They are cold-blooded, meaning their body temperature changes with their environment.

* Camouflage and Adaptation: The lizard's brown and bumpy skin helps it blend with dirt and rocks. This adaptation helps protect it from danger.

* Basic Needs of Living Things: All animals, including lizards, need food (insects), water, air, and shelter to stay alive and healthy.

Pedagogical Tip:

First graders learn best through direct observation and tactile experiences. Before discussing this image, consider bringing in safe materials (soil, twigs, rocks) for students to touch and explore. This multi-sensory approach helps anchor abstract concepts like "habitat" in concrete experience. You might also let students observe a bearded dragon or other classroom lizard (with proper care) to build genuine curiosity.

UDL Suggestions:

To support diverse learners: (1) Provide high-quality photos and real specimens for visual learners; (2) Use consistent hand motions when describing the lizard's body parts to support kinesthetic learners; (3) Create a "habitat corner" with actual soil, plants, and rocks where students can place toy lizards, supporting spatial and hands-on learners; (4) Offer word cards with pictures for students developing English language skills.

Zoom In / Zoom Out

Zoom In: Tiny Skin Cells
If we looked at the lizard's bumpy skin under a really powerful microscope, we would see millions of tiny, tiny cells stacked together. Each cell is so small we can't see it with just our eyes! These cells contain special colors (called pigments) that make the lizard brown and gray. The bumpy texture comes from how these cells are shaped and arranged. Even though we can only see the bumps with our eyes, the real magic happens at the cellular level, where the lizard's body controls its color to help it hide.

Zoom Out: The Desert Ecosystem
This lizard is just one animal in a much bigger community called an ecosystem. In the same habitat, there are insects the lizard eats, plants that provide shelter, soil that holds water, and decomposers (like fungi and bacteria) that break down dead things. The sun gives energy to plants, plants feed insects, insects feed the lizard, and when the lizard dies, it becomes part of the soil again. This lizard's habitat is connected to weather patterns, seasonal changes, and even distant water sources. Everything in nature is connected in a circle!

Discussion Questions

1. What does this lizard need to live in this place? (Bloom's: Remember | DOK: 1)
2. Why do you think the lizard's skin color is brown instead of bright red? (Bloom's: Analyze | DOK: 2)
3. If we took this lizard away from the dirt and rocks, what problems might it have? (Bloom's: Evaluate | DOK: 3)
4. What other animals do you think live in the same habitat as this lizard, and what would they need? (Bloom's: Create | DOK: 3)

Potential Student Misconceptions

Misconception 1: "Lizards choose their color when they want to hide."
Clarification: Lizards are born with colors that match their habitat. They don't decide to turn brown—their skin is brown because their parents were brown, and that color helps them survive in their home. Some lizards can change color slightly, but most lizards stay the same color their whole lives. It's like how you were born with the color of hair and skin you have; you didn't choose it.

Misconception 2: "The lizard lives in the dirt, so dirt is its only home."
Clarification: The dirt is just one part of the lizard's habitat. The lizard's real habitat includes the soil, rocks, wood chips, plants, insects for food, and water nearby. All of these things together make a complete home. If we removed just the rocks, or all the insects, the lizard wouldn't have everything it needs to survive.

Misconception 3: "Lizards are cold because they are cold-blooded."
Clarification: "Cold-blooded" doesn't mean the lizard is always cold! It means the lizard's body temperature matches the temperature of its surroundings. On a warm, sunny day, the lizard is warm. On a cool morning, the lizard is cooler. The lizard basks in the sun to warm up and hides in shade to cool down. This is very different from warm-blooded animals like humans, whose bodies stay the same warm temperature all day long, no matter what.

Extension Activities

1. Habitat Hunt Walk: Take students on a short outdoor walk to find small habitats (under logs, in grass, near rocks). Have them observe and draw what animals or signs of animals they find. Discuss how different animals need different homes.

2. Create a Lizard Habitat in a Shoebox: Provide each student (or small group) with a shoebox, soil, rocks, sticks, and leaves. Have them create a safe home for a toy lizard. Ask: "What does your lizard need? Where will it hide? Where will it find food?" Display habitats and discuss similarities and differences.

3. Camouflage Art Activity: Provide students with brown and gray paint or markers and textured paper (sandpaper, crinkled brown paper). Have them paint or draw a lizard, trying to make it blend in with the textured paper. Display and discuss which lizards are hardest to see and why.

Cross-Curricular Ideas

Math Connection: Counting and Comparing
Have students count the number of visible rocks, sticks, and wood chips in the habitat photo (or a real habitat setup). Create a simple graph showing "Things in the Lizard's Home" with categories like rocks, sticks, and leaves. Compare quantities: "Are there more rocks or more sticks?" This builds number sense and early data representation skills while staying connected to the habitat concept.

ELA Connection: Descriptive Language and Storytelling
Read aloud The Lizard and the Sun / La Lagartija y el Sol by Alma Flor Ada, which uses beautiful, descriptive language. Have students dictate or write simple sentences describing what the lizard sees, feels, and needs in its habitat. Create a class "Lizard's Day" story where each student contributes one sentence: "The lizard wakes up. The lizard is cold. The lizard sits in the sun..." This builds vocabulary and narrative skills while reinforcing habitat concepts.

Art Connection: Habitat Diorama and Camouflage Collage
Combine the shoebox habitat activity with a collage approach: students tear or cut pieces of brown, tan, and gray paper and glue them into their shoebox to create texture and hiding spots. They can paint or draw a lizard and try to hide it in their collage using camouflage colors. Display all dioramas and play "I Spy the Lizard"—this reinforces camouflage concepts while developing fine motor skills and artistic creativity.

Social Studies Connection: Animal Homes Around the World
Expand the habitat concept to different environments. Show pictures of lizards in different habitats: desert lizards, rainforest lizards, mountain lizards. Discuss how each lizard's habitat is different and how the animal's body matches its home (sandy color for desert, green for rainforest). This introduces basic geography and cultural awareness while showing that different animals need different homes in different parts of the world.

STEM Career Connection

Zoologist (Zoo-AHL-uh-jist) — Average Salary: $65,000/year
A zoologist is a scientist who studies animals and where they live. Zoologists watch lizards, snakes, birds, and all kinds of animals to understand what they need to survive and stay healthy. Some zoologists work at zoos, some work in nature, and some work in labs. They ask questions like: "What does this lizard eat? How does it stay safe? Where should we protect this animal's home?" Zoologists help us take care of animals and their habitats.

Wildlife Habitat Manager — Average Salary: $48,000/year

A habitat manager is someone who takes care of wild places where animals live, like forests, deserts, and wetlands. They make sure there are enough plants, water, rocks, and shelter for animals like lizards to survive. They might plant trees, create small ponds, remove invasive plants, or protect land from being destroyed. Habitat managers are like caretakers of animal homes—they work outside in nature to keep habitats healthy and safe for all the creatures living there.

Herpetologist (Her-puh-TAH-luh-jist) — Average Salary: $62,000/year
A herpetologist is a special scientist who only studies reptiles and amphibians—animals like lizards, snakes, frogs, and turtles. They learn about how these animals move, eat, reproduce, and survive in their habitats. Some herpetologists go on adventures to rainforests or deserts to find and study new species of lizards that no one has ever documented before! They help us understand why these amazing cold-blooded animals are so important to Earth's ecosystems.

NGSS Connections

Performance Expectation: K-LS1-1: Use observations to describe patterns of what plants and animals (including humans) need to survive.

Disciplinary Core Ideas:
- K-LS1.A: All organisms have basic needs. Plants need sunlight, water, and minerals. Animals need food, water, and air.
- K-LS1.C: All animals eat plants or other animals.

Crosscutting Concepts:
- Patterns: Students observe patterns in animal behavior and habitat needs.
- Structure and Function: The lizard's body structure (bumpy skin, legs, tail) helps it function in its habitat.

Science Vocabulary

* Habitat: The place where an animal lives and finds everything it needs to survive, like food, water, and shelter.

* Camouflage: Colors or patterns on an animal's skin that help it hide and blend in with its surroundings so predators cannot see it easily.

* Adaptation: A special body part or behavior that helps an animal survive in its home.

* Shelter: A safe, protected place where an animal can rest and hide from danger.

* Cold-blooded: An animal whose body temperature changes with the temperature of the air or ground around it (like lizards and snakes).

External Resources

Children's Books:
Lizards* by Mary Reavis Dunn (National Geographic Little Kids)
The Lizard and the Sun / La Lagartija y el Sol* by Alma Flor Ada
Bearded Dragons* by Adele Richardson (Pebble Books)

Teacher Tip: Start with concrete observations ("What do you see?") before moving to abstract concepts ("Why does the lizard need this home?"). First graders benefit from building understanding through real objects and sensory experiences first.