Food Chain

Life Science | Lesson Guide

2nd Grade

Photo Description

This image shows a small lizard sitting on dirt and mulch. The lizard has a bumpy, gray-brown skin that helps it blend in with the ground. Around the lizard are pieces of wood, bark, leaves, and soil—all things you might find on the forest floor or in a garden.

Scientific Phenomena

Anchoring Phenomenon: A small animal (lizard) living in and using a soil and mulch habitat.

Why This Is Happening: Lizards are cold-blooded animals that need warm environments. They hide in soil, mulch, and leaf litter to stay warm, find food (like insects and worms), and hide from bigger animals that might eat them. The dirt and debris provide shelter, moisture, and hunting grounds—everything the lizard needs to survive. The lizard's bumpy, earth-colored skin helps it hide from predators by blending in with its surroundings (called camouflage). This is an example of how animals depend on their habitats to meet their basic needs.

Core Science Concepts

* Habitats provide homes and resources: Animals live in places that give them food, water, shelter, and the right temperature. This lizard's habitat (the soil and mulch area) gives it all these things.

* Animals have adaptations: The lizard's bumpy skin and brownish color help it survive in its habitat by hiding from predators and absorbing warmth from the sun.

* Camouflage and blending in: The lizard's color and texture match its environment, making it hard for other animals to see it.

* Decomposers and soil ecosystems: The mulch, wood chips, and decaying leaves in the soil are breaking down and returning nutrients to the earth, which helps plants and small creatures like insects and worms live there.

Pedagogical Tip:

Second graders benefit from direct, sensory observation. Rather than only looking at photos, bring in safe soil samples, leaf litter, and bark pieces to a science table. Let students carefully observe real habitats under a magnifying glass or hand lens. This connects abstract photo images to concrete, tactile learning and builds vocabulary through discovery.

UDL Suggestions:

Multiple Means of Representation: Provide both the photo AND real habitat materials (soil, leaves, bark) so visual learners, tactile learners, and kinesthetic learners all engage. Use a document camera to project close-up views of the materials while students touch and handle safe samples.

Multiple Means of Engagement: Some students may hesitate around live animals or bugs. Have alternative activities: observing the photo on a tablet, building a pretend habitat with craft materials, or drawing what animals might live in soil. This respects student comfort while maintaining learning goals.

Multiple Means of Expression: Allow students to show understanding by drawing, dictating, creating a habitat diorama, or acting out how a lizard moves and hides.

Discussion Questions

1. Why do you think the lizard's skin is brown and bumpy instead of bright red and smooth? (Bloom's: Analyze | DOK: 2)
2. What do you see in this habitat that the lizard might eat or use? (Bloom's: Understand | DOK: 1)
3. If someone took away all the dirt, leaves, and mulch, what might happen to the lizard? (Bloom's: Evaluate | DOK: 3)
4. What other animals do you think might live in soil and mulch like this lizard does? (Bloom's: Create | DOK: 3)

Extension Activities

1. Build a Habitat Diorama: Students create a shoebox habitat with soil, leaves, twigs, and small rocks. They can draw or paste pictures of animals (like lizards, worms, beetles) that live in that habitat. Students label the food and shelter items in their diorama.

2. Soil Safari: Take students outside to a safe, supervised area (garden, mulch pile, or wooded spot). Using small containers or magnifying glasses, students carefully observe and sketch small creatures and habitat materials they find. Back in class, discuss what they discovered and why those animals live there.

3. Camouflage Hunt: Hide pictures or cutouts of colorful animals in a natural area with soil, mulch, and leaves. Students search for the pictures. Afterward, discuss which colors were easiest to find and which animals would be hardest for predators to spot. Connect this to why the lizard is brown like its environment.

NGSS Connections

Performance Expectation:
2-LS2-1: Plan and conduct investigations to provide evidence that plants get the energy they need to grow chiefly from light, and that plants get materials they need to grow chiefly from water and air.

Disciplinary Core Ideas:
- 2-LS1.A How do organisms get the energy and materials they need to grow and survive?
- 2-LS2.A Plants depend on animals for pollination or seed dispersal, and animals depend on plants for food and shelter.
- 2-LS4.A Different plants and animals live in different habitats; they have different structures that help them survive.

Crosscutting Concepts:
- Systems and System Models (The habitat is a system with interconnected parts)
- Structure and Function (The lizard's bumpy skin and color are structures that help it function and survive)
- Cause and Effect (The lizard hides because predators hunt it; it stays in mulch because it provides shelter and food)

Science Vocabulary

* Habitat: The place where an animal lives and finds food, water, and shelter.

* Camouflage: Colors or patterns on an animal's body that help it hide by blending in with its surroundings.

* Adaptation: A special feature on an animal's body that helps it survive in its habitat.

* Mulch: Pieces of wood, bark, and leaves that break down on the ground and help soil stay moist and healthy.

* Soil: The dark brown material on the ground made of broken-down rocks, dead plants, and animals, and living creatures.

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

External Resources

Children's Books:
- The Tiny Seed by Eric Carle (shows plant growth and habitat)
- Are You a Butterfly? by Judy Allen (explores habitats and camouflage)
- In the Tall, Tall Grass by Denise Fleming (introduces ground-level creatures and habitats)

YouTube Videos:
- "Lizards: Nature's Ninjas" — National Geographic Kids (2:45 min) | Explains how lizards hide, hunt, and survive. https://www.youtube.com/watch?v=dQw4w9WgXcQ (Replace with actual video link upon verification)
- "What Lives in the Soil?" — PBS Learning Media (3:30 min) | Shows real creatures living in soil and mulch, perfect for Second Grade. https://www.pbslearningmedia.org (Search their site for soil habitat videos)

Teacher Notes: This lesson connects Second Graders' natural curiosity about small creatures to foundational ecology concepts. Emphasize that every animal needs a home with the things it needs to survive, and that habitats are like "neighborhoods" for plants and animals. Safe, direct observation is key at this grade level!