Earthworm

Life Science | Lesson Guide

Kindergarten

Photo Description

This image shows an earthworm on soil and grass. The earthworm has a long, thin, brownish body that looks like a tube. It moves by stretching and squeezing its body, and you can see the rings that cover its whole body.

Scientific Phenomena

Anchoring Phenomenon: How does an earthworm move without legs?

Earthworms move using peristalsis—a wave-like contraction of their circular and longitudinal muscles. They don't have bones or legs; instead, their body segments contract and relax in sequence, anchoring themselves with tiny bristles called setae. This allows them to wiggle forward through soil. This is an excellent phenomenon for Kindergarteners because it's observable, fascinating, and connects to how their own bodies work in different ways.

Core Science Concepts

* Living Things Have Different Body Parts
  Earthworms have bodies made of segments (rings) that help them move. Unlike humans with legs, earthworms use their stretchy body to travel.

* Organisms Live in Different Habitats
  Earthworms live in soil and decomposing matter. They need moist soil, darkness, and organic material to survive.

* Animals Move in Different Ways
  Not all animals move the same way. While humans walk on legs, earthworms wiggle and squirm to get around.

* Living Things Are Interconnected
  Earthworms help soil by breaking down dead plants and improving soil quality for other organisms to use.

> **Pedagogical Tip:**
> Use the phrase "stretchy and squeezy" when describing earthworm movement—it's concrete, memorable, and allows students to mimic the motion with their own bodies. This kinesthetic connection deepens understanding and engagement for young learners.

> **UDL Suggestions:**
> Provide multiple means of representation: Show the image, read a simple book aloud, and let students watch a short video of an earthworm moving. For engagement, allow students to move like earthworms on the floor. For expression, students can draw earthworms, use hand motions, or dictate observations to an adult.

Discussion Questions

1. "What do you notice about the earthworm's body? What parts do you see?" (Bloom's: Remember | DOK: 1)

2. "How is an earthworm's way of moving different from how you move? How is it the same?" (Bloom's: Compare | DOK: 2)

3. "Why do you think earthworms live in soil instead of in trees?" (Bloom's: Analyze | DOK: 2)

4. "If you were an earthworm, what would you need to be happy and healthy in the soil?" (Bloom's: Create | DOK: 3)

Extension Activities

1. Earthworm Movement Dance
Play soft music and ask students to move across the classroom like earthworms—squirming, stretching, and contracting. Discuss how their muscles feel when they move this way. Ask: "Is it hard work to move like an earthworm?"

2. Build a Worm Habitat (Observational)
With teacher guidance, layer soil, sand, and compost in a clear plastic container. Carefully add one or two earthworms and observe over 1-2 weeks (with proper care). Students can draw or describe what the worms do each day. Note: Release worms back outdoors after observation.

3. Earthworm Sensory Exploration
(If earthworms are available and with parental permission) Allow students to gently touch a moist earthworm to feel its segments and texture. Discuss sensory words: slimy, cool, wiggly, smooth.

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 external parts. Different animals use their body parts in different ways to see, hear, grasp objects, protect themselves, move from place to place, and eat.
- K-LS1.C: All animals need food in order to live and grow. They obtain their food from plants or from other animals. Plants need water and light to grow.

Crosscutting Concepts:
- Structure and Function: Earthworms' segmented bodies are structured to allow movement through soil.
- Patterns: Earthworms follow patterns—they move in waves and are found in moist soil environments.

Science Vocabulary

* Earthworm: A long, soft animal that lives in soil and helps break down dead plants.
* Segment: One of the ring-shaped sections that make up an earthworm's body.
* Soil: The dark, crumbly material in the ground where plants grow and earthworms live.
* Habitat: The place where an animal or plant lives and finds food and water.
* Wiggle: To move back and forth with small, quick movements (like an earthworm does).

External Resources

Children's Books:

- Elmer and the Lost Teddy by David McKee (includes soil/ground themes)
- The Worm Family by Tony Johnston
- Wonderful Worms by Linda Glaser

YouTube Videos:
- "National Geographic Kids: Earthworms" — A short, colorful video showing earthworms in their habitat and how they move. Approximately 3 minutes. https://www.youtube.com/results?search_query=national+geographic+kids+earthworms

- "Crash Course Kids: Why Do We Need Soil?" — Explains the role of decomposers like earthworms in creating healthy soil. About 4 minutes, very engaging for young learners. https://www.youtube.com/watch?v=4eRPj5p5-Ow