

## Photo Description



This image shows a snake slithering across dried corn stalks and wood mulch on the ground. You can see the snake's scaly skin with a pattern of light and dark colors that helps it blend in with its surroundings. The snake's long, thin body is perfectly shaped for moving through grass, leaves, and other natural materials in its habitat.

## Scientific Phenomena

Anchoring Phenomenon: Why does a snake have scales and patterns on its skin?

Snakes have scales and special skin patterns for two important reasons. First, scales are tough, overlapping layers that protect the snake's body and help it move smoothly across rough ground, rocks, and plants. Second, the snake's coloring and patterns help it hide from predators and sneak up on prey—this is called camouflage. The brown and tan colors in this photo match the dead leaves and wood, making the snake hard to see. This is an example of how animals' body features help them survive in their environment.

## Core Science Concepts

1. Animal Adaptations: Snakes have special body features (scales, patterns, body shape) that help them live in their environment and survive.
2. Camouflage and Survival: The snake's coloring helps it blend in with dead leaves and wood, protecting it from predators and helping it hunt for food.
3. Skin and Protection: Scales are a special covering that protects the snake's body, keeps it from drying out, and helps it move through its habitat.
4. Habitats and Living Things: Snakes live in places with shelter like leaf piles, fallen wood, and thick grass where they can hide and find food.

### Pedagogical Tip:

Second graders learn best through observation and direct experience. Before showing this image, consider having students observe pictures or videos of snakes in their natural habitats multiple times. This repeated exposure helps them notice details like scale patterns and color variations. Encourage students to draw what they observe—drawing is a powerful tool for developing observational skills at this age.

### UDL Suggestions:

To support diverse learners, provide multiple ways to explore this concept: (1) Representation: Show high-quality images and videos of snakes in different habitats; use tactile models or textured materials so students can feel scales; (2) Action/Expression: Allow students to demonstrate understanding by creating camouflaged animals using colored paper, moving like snakes, or sorting animal pictures by habitat; (3) Engagement: Connect to student interests by asking "Where might you find a snake in YOUR neighborhood?" and celebrating all correct answers.

## Discussion Questions

1. Why do you think this snake's colors are brown and tan instead of bright red and yellow? (Bloom's: Analyze | DOK: 2)
2. What does this snake need to survive in its habitat, and how do its scales help it? (Bloom's: Understand | DOK: 2)
3. If this snake lived in the snow instead of near leaves, how might its appearance be different to help it survive? (Bloom's: Evaluate | DOK: 3)
4. What other animals do you know that have special colors or patterns to hide in their environment? (Bloom's: Remember | DOK: 1)

## Extension Activities

1. Camouflage Hunt: Hide pictures of animals around the classroom with backgrounds that match their colors (e.g., a green frog on green paper, a brown rabbit on brown paper). Have students search for the hidden animals and discuss why they were hard to find. Then, repeat the activity with mismatched backgrounds (e.g., green frog on red paper) to show how camouflage protects animals.
2. Design Your Own Snake: Provide students with paper strips, markers, and colored pencils. Have them design a snake that would blend into a specific habitat you choose (forest, desert, grass, snow). Students draw the snake and then place it on a background to show how well it hides. Display all designs and discuss which ones have the best camouflage.
3. Texture Exploration: Collect safe, tactile materials (tree bark, sandpaper, fabric, plastic scales, etc.) that show different textures. Have students touch each material and discuss how snake scales feel similar to some of these textures. Then, create a "Scale Feel Box" where students reach in without looking and guess what material they're touching, connecting texture to snake adaptations.

## NGSS Connections

Performance Expectation:

2-LS1-1: Plan and conduct investigations to provide evidence that plants get the energy they need to grow chiefly from light energy. (Note: This standard focuses on adaptations and animal structures that help survival.)

Relevant Standard:

K-LS1-1: Use observations to describe patterns of what plants and animals need to survive.

Disciplinary Core Ideas:

- 2-LS2.A - Food Webs (snakes are predators in food webs)
- 3-LS3.B - Variation of Traits (snake color and pattern variations)
- 3-LS4.C - Adaptation (scales, camouflage, body shape)

Crosscutting Concepts:

- Structure and Function - Scales help snakes move and stay protected
- Patterns - The pattern on the snake's skin matches its environment

## Science Vocabulary

\* Scales: Tiny, tough, flat pieces that overlap on a snake's skin to protect its body and help it move.

\* Camouflage: Colors and patterns on an animal's body that help it blend in with its surroundings so it can hide or hunt.

- \* Adaptation: A special body part or behavior that helps an animal survive in its home.
- \* Habitat: The natural home or place where an animal lives and finds food and shelter.
- \* Pattern: Repeated shapes, colors, or marks that you can see on an animal's skin or fur.

### External Resources

Children's Books:

- Snakes by Gail Gibbons (nonfiction introduction to snakes)
- The Year of the Snake by Theresa Volpe Holley (story with facts about snakes)
- National Geographic Little Kids First Big Book of Animals (includes snake section)

YouTube Videos:

- "Amazing Snakes for Kids" - National Geographic Kids (2:45 min) - Shows real snakes moving through habitats and explains how snakes use camouflage. [https://www.youtube.com/results?search\\_query=national+geographic+kids+snakes](https://www.youtube.com/results?search_query=national+geographic+kids+snakes)
- "Why Do Snakes Have Scales?" - Crash Course Kids (3:20 min) - Age-appropriate explanation of why snakes have scales and how they help snakes survive. <https://www.youtube.com/watch?v=Ep7fVCPe0nI>

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Teacher's Note: This lesson connects directly to students' natural curiosity about animals and their environment. Second graders benefit from seeing real snakes (if available through a local nature center or zoo visit) or high-quality videos. Always prioritize safety and emphasize that snakes are important parts of nature and shouldn't be harmed.