

Photo Description



This image shows a snake moving through dried corn stalks and wood chips in its natural habitat. You can see the snake's patterned skin with scales that help it blend in with its surroundings. The snake is a harmless species that lives in areas with plant material, where it hunts for small prey like insects and rodents.

Scientific Phenomena

Anchoring Phenomenon: Why does a snake shed its skin, and how does its skin help it survive?

This image captures a snake in its typical environment, which connects to the larger phenomenon of adaptation and growth. Snakes shed their outer layer of skin (called the epidermis) several times per year as they grow larger. This happens because their skin doesn't grow with their body the way human skin does. Underneath the old skin is a fresh, new layer that allows the snake to continue growing. Additionally, a snake's patterned skin and scales are structural adaptations that help it hide from predators and move efficiently through tight spaces—both critical survival strategies.

Core Science Concepts

- * **Structural Adaptations:** Snakes have special features like scales and patterns on their skin that help them survive. Scales protect their bodies and help them move smoothly through grass, leaves, and soil. The coloring helps snakes blend into their surroundings (camouflage).
- * **Growth and Development:** Snakes grow throughout their lives, and their skin doesn't stretch like ours does. When a snake gets too big for its skin, it sheds the old layer and grows a new one underneath. This happens multiple times as the snake grows.
- * **Habitat and Environment:** Snakes live in specific environments where they can find food and shelter. This snake's habitat includes plants, leaf litter, and wood—places where small animals hide that the snake can eat.
- * **Life Cycles:** Snakes are reptiles with their own life cycle. They are born or hatch from eggs, grow by shedding skin, hunt for food, and eventually reproduce.

Pedagogical Tip:

When teaching about snake skin, start with a hands-on comparison activity: Have students touch different textured materials (sandpaper, silk, bumpy rubber) while wearing a blindfold. Then reveal pictures of snake scales. Ask: "Which texture is most like a snake's scales?" This multisensory approach helps students understand why scales feel rough and bumpy—they're designed for gripping and moving, not smoothness.

UDL Suggestions:

To support diverse learners: (1) Provide tactile models of snake scales so students with visual impairments can explore the concept; (2) Offer a word bank with vocabulary terms for students still developing language skills; (3) Allow students to choose between drawing, building a model, or writing to demonstrate their understanding; (4) Use short video clips showing actual snake shedding to provide visual scaffolding for students who need concrete imagery before abstract discussion.

Discussion Questions

1. "How do you think a snake's scales help it move through leaves and grass?"
(Bloom's: Understand | DOK: 1-2)
2. "Why might a snake with brown and gray coloring survive better in a forest than a bright red snake?"
(Bloom's: Analyze | DOK: 2)
3. "If a snake sheds its skin many times in its life, what does that tell us about how much the snake grows?"
(Bloom's: Analyze | DOK: 2-3)
4. "Compare how snakes grow and shed their skin to how humans grow. What is different? What is the same?"
(Bloom's: Evaluate | DOK: 3)

Extension Activities

1. Shed Skin Investigation: Provide students with images or (if available and safe) preserved snake shed skin. Have students use magnifying glasses to observe the pattern of scales. They can make a detailed drawing and label the scales, comparing their observations to pictures of live snakes.
2. Camouflage Hunt: Create a habitat display with dried leaves, twigs, and soil (like the image shows). Hide small toy snakes or snake-colored objects around the display. Have students search for them and discuss why some were easier or harder to find based on their colors and patterns. Relate this to real snakes hiding from predators.
3. Growth and Shedding Timeline: Have students create a visual timeline showing a snake's life cycle from egg to adult, highlighting the multiple times it sheds its skin. They can use drawings or create a chart showing approximate ages when snakes shed (hatchlings shed every 4-6 weeks; adults every 3-4 months). Ask: "Why does a baby snake shed more often than an adult snake?"

NGSS Connections

Performance Expectation:

3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all animals have in common birth, growth, reproduction, and death.

Disciplinary Core Ideas:

- 3-LS1.B—Growth and Development of Organisms (snakes shed skin as they grow)
- 3-LS4.C—Adaptation (scales and coloring help snakes survive)

Crosscutting Concepts:

- Structure and Function (scales have a specific structure that serves survival functions)
- Patterns (the pattern on the snake's skin helps it hide in its environment)

Science Vocabulary

- * Scale: A small, thin plate of hard skin that covers a snake's body and protects it.
- * Shed: When an animal removes or loses an outer layer of skin because it has grown too big for it.
- * Adaptation: A special feature or behavior that helps an animal survive in its environment.
- * Camouflage: Colors and patterns on an animal's skin that help it blend in and hide from other animals.

- * Reptile: A cold-blooded animal with scales and a backbone, like snakes, lizards, and turtles.
- * Habitat: The place where an animal lives that has the food, water, and shelter it needs.

External Resources

Children's Books:

- Snakes by Gail Gibbons (Simple, illustrated guide to snake facts)
- National Geographic Little Kids First Big Book of Animals by Catherine D. Hughes (Features snakes in their natural habitats)
- Slinky, Scaly Snakes by Jennifer Dussling (Level 2 reader with vibrant photos)

YouTube Videos:

- "Why Do Snakes Shed Their Skin?" National Geographic Kids
https://www.youtube.com/results?search_query=why+do+snakes+shed+their+skin+national+geographic+kids
(Short, animated explanation of snake shedding with vivid visuals appropriate for third graders—approximately 3-4 minutes)
- "Snakes: Facts and Adaptations" Crash Course Kids
https://www.youtube.com/results?search_query=snakes+facts+adaptations+crash+course+kids
(Engaging overview of how snakes are adapted to their environments, with clear examples and age-appropriate pacing—approximately 4-5 minutes)

Teacher Notes: This lesson emphasizes that all animals have life cycles with growth stages, and that physical features (structures) help animals survive. Be mindful that some students may have snake phobias; frame snakes as beneficial animals that help control pest populations. Always prioritize student comfort and provide opt-in rather than mandatory close-up encounters with any animal materials.