

## Photo Description



This image shows a snake resting on a piece of dark, weathered wood surrounded by fallen leaves and forest debris. The snake's body is tan and brown, making it very hard to see against the dark bark and leaf litter. The colors of the snake's skin blend in with the colors all around it in nature.

## Scientific Phenomena

Anchoring Phenomenon: Camouflage

This image demonstrates camouflage—an animal's ability to blend into its surroundings using colors and patterns that match its environment. The snake in this photo is camouflaged because its tan and brown coloring matches the dead wood, soil, and autumn leaves around it. This happens because animals have evolved these colors and patterns over many generations to help them survive. When a snake blends in with its surroundings, predators have a harder time spotting it, and it can also sneak up on prey more easily. This is a survival adaptation—a body feature that helps an animal stay safe and find food.

## Core Science Concepts

- \* Animals have different colors and patterns – Just like people wear different colored clothes, animals have different colored skin, fur, or scales. These colors help them fit into their habitats.
- \* Colors help animals hide – When an animal's color matches its environment (like a brown snake on brown wood), it becomes hard to see. This helps keep the animal safe from predators and helps it hunt food.
- \* Animals adapt to their homes – Over time, animals develop features that help them survive in the places where they live. A forest animal might be brown and green, while a snow animal might be white.
- \* Patterns matter too – Spots, stripes, and other patterns can break up an animal's shape, making it even harder to notice against a busy background like leaves and branches.

### Pedagogical Tip:

For Kindergarteners, avoid using the word "predator" in complex sentences. Instead, use simpler language: "The snake hides so bigger animals don't see it" or "The snake is hiding so it can hunt for food." Use direct comparisons to their own experiences: "Your brown shirt helps you hide in the dirt, just like this snake hides in the leaves!"

### UDL Suggestions:

**Multiple Means of Representation:** Provide the photo alongside real objects (actual bark, leaves, toy snakes in different colors) so students can physically explore the concept of matching colors. Some learners need to touch and manipulate to understand. **Multiple Means of Engagement:** Create a hide-and-seek game where students find tan/brown objects hidden in a pile of leaves—this makes the abstract concept concrete and playful. **Multiple Means of Expression:** Allow students to show understanding through drawing, building with blocks, or physically acting out being a hidden animal, not just through talk.

## Zoom In / Zoom Out

### Zoom In: Skin Cells and Color Pigments

When we look very, very closely at the snake's skin through a special magnifying tool called a microscope, we can see tiny cells. These cells contain special colored stuff called pigments that make the snake brown and tan. These pigments are like tiny paint drops inside each cell. The snake was born with these pigments because its parents had them too. The pigments stay the same color their whole life—the snake doesn't change colors like a chameleon does. This color is locked into the snake from the moment it hatches!

### Zoom Out: Forest Food Chain and Survival

When we step back and look at the whole forest, we see the snake is part of a bigger system. The snake hides in the leaves and wood to stay safe from larger animals (like hawks or bigger snakes) that might want to eat it. At the same time, the snake hunts for small animals like insects and mice to eat. The snake's camouflage helps it survive in this forest home where everything is brown, tan, and dark. Without places to hide and without camouflage, snakes wouldn't survive in forests, and the forest's food chain would break apart. Camouflage isn't just about one snake—it's about how all forest animals stay alive together.

## Discussion Questions

1. Why is it hard to see the snake in this picture? (Bloom's: Remember | DOK: 1)
2. How does the snake's color help it stay safe? (Bloom's: Explain | DOK: 2)
3. If we moved this snake to a snowy place, would its brown color still help it hide? Why or why not? (Bloom's: Analyze | DOK: 2)
4. Can you think of other animals that hide using their colors? What colors are they? (Bloom's: Apply | DOK: 2)

## Potential Student Misconceptions

Misconception 1: "The snake changes its color to match the wood and leaves."

Clarification: The snake's color doesn't change—it was born brown and tan and stays that color forever. The snake didn't decide to be brown to hide; it just is brown because that's what its parents passed down to it. The snake is lucky because its brown color happens to match the forest around it! Use this analogy: "Your hair color doesn't change when you sit on the brown couch. You're just the color you were born with—and so is the snake!"

Misconception 2: "All snakes are hard to see because they're all camouflaged."

Clarification: Only some snakes are hard to see in forests because those snakes are brown and blend in. But some snakes are bright red, yellow, or blue—those snakes stand out! Those colorful snakes usually live in places with bright colors (like rainforests with red flowers), or their bright colors warn predators: "I'm poisonous, don't eat me!" Not all snakes need to hide the same way.

Misconception 3: "The snake is hiding because it's scared or trying to trick us."

Clarification: The snake isn't thinking or trying to hide on purpose. Its brown color just naturally helps it blend in—the snake doesn't know it's hidden. The hiding happens automatically because of how the snake's body looks, not because the snake made a choice. It's like how your brown shoes blend in with brown dirt without you trying to hide them!

### Extension Activities

1. Camouflage Hide-and-Seek Game: Hide objects around the classroom that match their backgrounds (brown toys in a brown box, green objects in plants, etc.). Have students find them and discuss why some are easy or hard to spot. Ask: "Why did you miss the green block? Because it matched the plant!"
2. Animal Coloring Craft: Provide pictures of different habitats (forest, snow, sand) and have students color animal cutouts to match each habitat. They can color a bunny white for snow and brown for forest, then practice moving the animals to different environments and discussing if the colors still work as camouflage.
3. Nature Detective Walk: Take a short outdoor walk and have students search for animals or animal signs (feathers, holes, nests) that are camouflaged in their environment. Take photos or make simple sketches. Back in class, discuss: "Why was it hard to find this? What colors did it match?"

### Cross-Curricular Ideas

#### Math Connection: Counting and Comparing Colors

Set up a nature sorting station with real leaves, twigs, and bark in different shades (dark brown, light tan, green). Have students count how many "brown things" they can find versus "green things." Create a simple bar graph or picture chart showing which color appears most often in the forest. Ask: "Why do you think there are more brown things than green things on the ground?" This connects camouflage to data collection and comparison.

#### ELA Connection: Descriptive Language and Story Creation

Read aloud a simple camouflage story like *The Mixed-Up Chameleon*, then have students dictate or draw their own story: "Where would the snake hide?" Students can describe hiding spots using color words: "The snake hides on the brown log near the dark leaves." Create a class book with student drawings and simple sentences. This builds vocabulary around colors, descriptive words, and storytelling while reinforcing the science concept.

#### Art Connection: Camouflage Collage

Provide students with colored paper strips, leaves, bark, and twigs collected from nature. Have them create a mixed-media collage of an animal hiding in its habitat. Students choose colors that match (brown, tan, green, gray) to hide their animal cutout. Display finished work and have a "Where's the Animal?" gallery walk where classmates try to find hidden animals. This reinforces that colors work together to create camouflage through hands-on art-making.

#### Social Studies Connection: Homes and Habitats Around the World

Discuss where snakes live (forests, deserts, rainforests, grasslands) and show picture cards of different habitats. Ask: "What color would a snake need to be to hide in the desert? In the snow? In a rainforest?" Students can sort animal pictures into habitat cards and discuss how animals in different places need different colors to survive. This builds geography awareness while reinforcing that animals adapt to their specific homes.

### STEM Career Connection

#### Wildlife Biologist

A wildlife biologist is a scientist who studies animals in nature. They go into forests, deserts, and other wild places to watch animals like snakes and see how they survive. Wildlife biologists ask questions like: "Why is this snake brown?" and "What does this snake eat?" They help us understand how to keep animals safe. Some wildlife biologists even protect endangered animals or teach people about nature.

Average Annual Salary: \$68,000

### Zookeeper

A zookeeper takes care of animals at zoos, including snakes! They feed the animals, clean their homes, and help visitors learn about them. Zookeepers need to understand what colors snakes are, what they eat, and how to keep them healthy and happy. Some zookeepers help protect animals that might disappear from nature.

Average Annual Salary: \$32,000

### Nature Photographer

A nature photographer takes pictures of animals in the wild, just like the photo we're looking at! They hide in bushes, wait very quietly, and use special cameras to photograph snakes and other animals in their homes. Nature photographers help people see animals and learn why camouflage is important. Their beautiful photos teach the world about nature.

Average Annual Salary: \$48,000

## NGSS Connections

Grade K 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 such as food, water, and appropriate conditions of temperature and light.
- K-LS1.C – Many characteristics of an organism are inherited from parents, but other characteristics are learned or influenced by the environment.

Crosscutting Concepts:

- Patterns – The snake's coloring follows a pattern that matches its environment.
- Structure and Function – The snake's brown and tan colors function to help it hide and survive.

## Science Vocabulary

- \* Camouflage: When an animal's color or pattern helps it blend in and hide from other animals.
- \* Habitat: The place where an animal lives, like a forest, desert, or pond.
- \* Adapt: To change or develop a special feature that helps an animal survive in its home.
- \* Predator: An animal that hunts and eats other animals.
- \* Blend: To mix together so things look like one thing instead of separate things.

## External Resources

Children's Books:

- The Mixed-Up Chameleon by Eric Carle – A colorful story about a chameleon that can change its colors and patterns.
- Hide and Seek by Debbie Blecha – A simple board book showing animals hiding in their habitats.
- Who Hides? by Yoshi – A peek-a-boo book featuring camouflaged animals children can discover.