Arachnid Camouflage

Life Science | Lesson Guide

2nd Grade

Photo Description

This photo shows a spider resting on tree bark covered with lichen and moss. The spider's brown and tan body blends in so well with the bumpy, speckled bark that it is hard to spot at first. The spider uses this hiding trick to stay safe from animals that might want to eat it.

Scientific Phenomena

Anchoring Phenomenon: Camouflage (or protective coloration) in animals

Why This Is Happening:
Spiders and many other animals have colors and patterns on their bodies that match their environment. This adaptation helps them hide from predators and sneak up on prey. The spider's coloring is not a choice—it is how the spider's body naturally looks because of its parents' genes. Over many generations, spiders with colors that matched their surroundings survived longer and had more babies, so this trait became more common in spider populations. This is an example of natural selection and how animals change over time to fit their habitats.

Core Science Concepts

1. Camouflage is a protective adaptation: Animals have features (colors, patterns, shapes) that help them hide in their environments.

2. Habitats have specific characteristics: The bark, lichen, and moss create a speckled, bumpy texture and color palette that the spider matches.

3. Animals have traits inherited from parents: The spider's coloring comes from its parents' genes, not from learning or choice.

4. Survival and adaptation: Animals with traits that help them survive in their habitat are more likely to live and reproduce.

Pedagogical Tip:

When teaching camouflage to second graders, use the term "hide and blend in" before introducing the word "camouflage." Have students physically observe the image first—ask them to find the spider before naming it. This concrete, discovery-based approach builds stronger understanding than simply telling students what camouflage is. Students remember what they discover themselves!

UDL Suggestions:

Multiple Means of Representation: Display the image on a large screen or printed poster. Provide a zoomed-in, labeled version showing exactly where the spider is. Some students may benefit from a cartoon illustration of the same scene to understand the concept before analyzing the photograph.

Multiple Means of Engagement: Partner students with different learning styles during observation activities—some may excel at visual searching, while others may prefer discussing what they notice with a partner before sharing with the class.

Multiple Means of Expression: Allow students to show understanding through drawing, pointing, verbal explanation, or acting out how the spider hides—not just through worksheets.

Discussion Questions

1. Why do you think this spider's color is brown and tan instead of bright red or blue? (Bloom's: Analyze | DOK: 2)

2. What would happen to a bright red spider living on this tree bark? Why? (Bloom's: Evaluate | DOK: 3)

3. Can you find the spider in this photo? How does its body help it stay hidden? (Bloom's: Understand | DOK: 1)

4. Do you think a spider living on green leaves would have the same colors as this spider? Why or why not? (Bloom's: Analyze | DOK: 2)

Extension Activities

1. Camouflage Hunt Scavenger Hunt: Hide small paper spiders in different patterns/colors around the classroom (on white paper, on bark-colored paper, on leaf-colored paper). Have students search for and find the spiders. Discuss which ones were easiest/hardest to find and why. This reinforces that camouflage works better in matching environments.

2. Design Your Own Camouflaged Creature: Provide students with cut-out animal shapes and various textured/colored papers (bark, leaves, sand, snow images). Students glue their animals onto the background where they think it would blend in best, then explain their choice to a partner. This builds understanding that different habitats need different camouflage colors.

3. Nature Walk Observation: Take students outside to look for camouflaged insects, birds, or other small animals on trees, plants, and rocks. Use magnifying glasses and remain quiet to observe. Return to class and draw pictures of what they found, labeling the animal and describing how it blended in.

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 Animals have body parts that help them sense the world and meet their needs.
- 2-LS4.B Animals have different body structures that serve different functions in growth, survival, and reproduction.

Crosscutting Concepts:
- Patterns Students observe the pattern of the spider's coloring matching the bark pattern.
- Structure and Function The spider's coloring (structure) helps it survive by hiding (function).

Science Vocabulary

* Camouflage: Colors or patterns on an animal's body that help it hide in its habitat.
* Adaptation: A body part or trait that helps an animal survive and live in its environment.
* Habitat: The place where an animal lives and finds food, water, and shelter.
* Predator: An animal that hunts and eats other animals for food.
* Prey: An animal that is hunted and eaten by other animals.
* Blend in: To look like your surroundings so you are hard to see.

External Resources

Children's Books:

- The Mixed-Up Chameleon by Eric Carle (explores how animals change colors and adapt to environments)
- Who Hides Here? by Marianne Berkes (a search-and-find book about animal camouflage)
- Hide and Seek: A Camouflage Story by Karen Whyman (simple, engaging introduction to camouflage)

YouTube Videos:

- "Animal Camouflage for Kids" - National Geographic Kids (2:45 minutes)
  Engaging overview of how different animals hide using camouflage with clear, colorful examples.
  https://www.youtube.com/watch?v=R58JZlkPxcQ

- "Can You Spot the Animal? Camouflage in Nature" - PBS Learning Media (3:30 minutes)
  Interactive-style video showing real animals camouflaged in their habitats with pauses for students to guess.
  https://www.youtube.com/watch?v=ijBxWgFz7Aw