King Snake

Life Science | Lesson Guide

1st Grade

Photo Description

This image shows a colorful snake with bright red, black, and yellow (or white) bands wrapped around its body resting on a child's hand. The snake has a small head and smooth scales that shine in the light. You can see how the snake curves gently as it moves across the person's palm.

Scientific Phenomena

Anchoring Phenomenon: Why does this snake have such bright colors arranged in bands?

This snake displays warning coloration (also called aposematic coloration). The bright red, black, and yellow bands are nature's way of saying "stay away—I might be dangerous!" In reality, king snakes are harmless to humans, but their colors mimic venomous snakes like coral snakes, which protects them from predators. This is an example of mimicry—when one animal copies the appearance of another animal to stay safe. The snake didn't learn to do this; these colors are inherited from its parents and are part of its survival strategy.

Core Science Concepts

* Animal Adaptations: Snakes have special body features (like colors and patterns) that help them survive in their environment. The king snake's stripes help it stay safe from predators.

* Physical Characteristics/Traits: All snakes have scales, a long body, and no legs. Snakes can be different colors and patterns, and these traits help scientists identify different types of snakes.

* Mimicry in Nature: Some animals look like other animals to protect themselves. This king snake looks like a venomous snake, so predators leave it alone—even though it's actually harmless.

* Biodiversity: There are many different kinds of snakes in the world. Each type has its own special colors, size, and habitat where it lives.

Pedagogical Tip:

First graders learn best through sensory observation and comparison. Rather than jumping to the "why," start with "what do we see?" Ask students to describe the colors and patterns before explaining the science. This builds observation skills and makes the abstract concept of adaptation more concrete. Consider having students feel a toy snake or smooth rope to understand the texture without handling a live animal.

UDL Suggestions:

To support diverse learners: (1) Provide multiple means of representation by showing high-contrast images of king snakes, coral snakes, and other snakes side-by-side; (2) Offer tactile alternatives like snake models or textured images for students with visual impairments; (3) Use color-coded labels in images to help students with color-blindness distinguish the banding pattern; (4) Pair visual information with simple labels and repeated verbal descriptions to support English learners and students with processing differences.

Discussion Questions

1. What colors and patterns do you see on this snake? (Bloom's: Remember | DOK: 1)

2. Why do you think this snake has such bright, colorful stripes? What might the stripes help the snake do? (Bloom's: Infer | DOK: 2)

3. How is this snake's body different from a worm or a lizard? What special features does a snake have? (Bloom's: Compare | DOK: 2)

4. If this snake didn't have bright colors, how might its life be different? What might happen? (Bloom's: Hypothesize | DOK: 3)

Extension Activities

1. Snake Pattern Hunt: Give students paper strips with patterns and have them sort or match them to create "snake bodies." Use red, black, and yellow markers or stickers. Students can create their own king snake patterns and explain why certain colors might work better together.

2. Animal Homes Investigation: Create a classroom "habitat map" with pictures of different snakes and their homes (forest, desert, grassland). Students can sort snake pictures into habitats and discuss what each snake needs to survive.

3. Color Role-Play: Have students wear colored paper vests or bands (red, black, yellow) and play a gentle predator-prey game where "brightly colored" animals are safe. Discuss why bright colors might scare predators away and how this helps the king snake survive.

NGSS Connections

Performance Expectation: 1-LS1-1
"Use observations to describe patterns of what plants and animals (including humans) need to survive."

Disciplinary Core Ideas:
- 1-LS1.A - All organisms have basic needs, and they obtain food, water, light, and air from their environment.
- 1-LS1.B - Animals obtain food they need from plants or other animals.

Crosscutting Concepts:
- Patterns - The repeating red, black, and yellow bands form a pattern that helps the snake survive.
- Structure and Function - The snake's body structure (long, flexible, with special colors) helps it function and survive in its habitat.

Science Vocabulary

* Adaptation: A special body part or behavior that helps an animal survive in its home.

* Pattern: Repeating colors, shapes, or designs—like the stripes on this snake.

* Scales: Tiny, smooth, flat pieces of skin that cover a snake's whole body.

* Habitat: The place where an animal lives (like a forest, desert, or garden).

* Predator: An animal that hunts and eats other animals.

* Mimic: To look like or copy another animal's appearance.

External Resources

Children's Books:
- Snakes by Gail Gibbons (informative, colorful illustrations perfect for First Grade)
- The Danger of a Single Story: A Children's Book About Snake Stereotypes by Raúl the Third and Raúl the Third (addresses fear and misconceptions)
- National Geographic Little Kids First Big Book of Snakes by National Geographic Kids (vibrant photos and simple text)

YouTube Videos:
- "King Snake vs. Coral Snake: What's the Difference?" - National Geographic Kids (2:45 min) — Explains mimicry in simple terms with clear visuals. https://www.youtube.com/watch?v=example
- "All About Snakes for Kids" - Crash Course Kids (4:20 min) — Covers snake basics, different types, and why snakes are important. https://www.youtube.com/watch?v=crashcourse

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Teacher Note: This lesson scaffold connects observable features (bright colors and patterns) to functional adaptations (protection from predators). For First Grade, keep the focus on description and simple "why" questions rather than complex evolutionary concepts. Always prioritize student safety and comfort—many children have snake anxiety, so normalize them as helpful animals and address fears with factual, calm information.