Raccoon

Life Science | Lesson Guide

3rd Grade

Photo Description

A raccoon sits on top of a large tree stump in a shady forest area. The raccoon has gray and black fur with a distinctive black mask around its eyes and black rings on its tail. Green plants and trees surround the wooden stump where the raccoon is resting.

Scientific Phenomena

The anchoring phenomenon shown is animal adaptation for survival. The raccoon demonstrates multiple adaptations that help it survive in its forest habitat. Its distinctive facial markings aren't just for looks - the dark "mask" around its eyes helps reduce glare and improve night vision, similar to how football players use eye black. The raccoon's choice to rest on the elevated stump provides safety from ground predators while allowing it to survey its surroundings. This behavior showcases how animals use both physical adaptations (body features) and behavioral adaptations (actions) to meet their survival needs in their specific environment.

Core Science Concepts

1. Animal Adaptations: Physical features like the raccoon's mask, dexterous paws, and striped tail help it survive in its environment.

2. Habitat Requirements: Animals need specific places to live that provide food, water, shelter, and space to raise their young.

3. Behavioral Adaptations: The raccoon's choice to rest in an elevated, shaded location demonstrates learned survival behaviors.

4. Camouflage and Protection: The raccoon's coloring helps it blend with shadows and tree bark in its forest environment.

Pedagogical Tip:

When teaching about adaptations, have students act out different animal behaviors or use mirrors to observe their own "adaptations" like opposable thumbs. This kinesthetic approach helps make abstract concepts concrete for young learners.

UDL Suggestions:

Provide multiple ways for students to demonstrate their understanding of animal adaptations - through drawings, physical demonstrations, verbal explanations, or creating simple models. This allows students with different strengths and learning preferences to show what they know.

Zoom In / Zoom Out

1. Zoom In: At the cellular level, the raccoon's whiskers contain specialized nerve cells called mechanoreceptors that can detect tiny vibrations and movements, helping the raccoon navigate and find food in complete darkness.

2. Zoom Out: This raccoon is part of a larger forest ecosystem where it serves as both predator and prey. It helps control insect and small animal populations while providing food for larger predators like coyotes, connecting it to complex food webs that maintain forest balance.

Discussion Questions

1. "What do you notice about this raccoon's body that might help it survive in the forest?" (Bloom's: Analyze | DOK: 2)

2. "How might this raccoon's life be different if it lived in a desert instead of a forest?" (Bloom's: Evaluate | DOK: 3)

3. "What evidence can you find in the photo that shows this is the raccoon's natural habitat?" (Bloom's: Apply | DOK: 2)

4. "Why do you think the raccoon chose to rest on top of the stump instead of on the ground?" (Bloom's: Analyze | DOK: 2)

Potential Student Misconceptions

1. Misconception: "Raccoons are dirty because they have black around their eyes."
   Clarification: The black markings are natural fur coloring that helps raccoons see better at night, not dirt or sickness.

2. Misconception: "All animals that live in trees are the same."
   Clarification: Different animals have different adaptations for tree life - raccoons climb down headfirst using rotating ankle joints, while squirrels use their tails for balance.

3. Misconception: "Animals choose their adaptations."
   Clarification: Animals are born with adaptations that developed over many generations; they don't consciously decide to grow certain features.

Cross-Curricular Ideas

1. ELA - Animal Storytelling: Have students write a short story from the raccoon's perspective describing a day in its life. They can use the vocabulary words from the lesson and include details about what the raccoon does to survive and adapt to its forest home.

2. Math - Measurement and Comparison: Students can measure and compare the sizes of different animal homes. Create a chart showing how tall a tree stump might be compared to a student's height, or estimate how many acorns a raccoon might find in a day using simple multiplication.

3. Art - Camouflage Collage: Students create a forest habitat collage using torn paper, leaves, and natural materials. Then they draw or cut out a raccoon and try to hide it in their artwork to demonstrate camouflage. This hands-on activity reinforces how the raccoon's coloring helps it blend into its environment.

4. Social Studies - Animal Communities: Discuss how raccoons live in communities with other animals (forest neighborhoods). Students can create a map of a forest habitat showing where different animals live, what they eat, and how they depend on each other - introducing the concept of interdependence.

STEM Career Connection

1. Wildlife Biologist: A wildlife biologist is a scientist who studies animals in nature to understand how they live, what they eat, and how they survive. They might spend time in forests watching raccoons and other animals to learn about their adaptations. Wildlife biologists help protect animals and their habitats so they can stay healthy and safe.
   - Average Annual Salary: $65,000 - $75,000 USD

2. Zookeeper: A zookeeper takes care of animals in zoos and wildlife centers. They feed the animals, clean their habitats, and watch them to make sure they stay healthy and happy. Some zookeepers work with rescued raccoons and teach people about these amazing animals and why we need to protect nature.
   - Average Annual Salary: $28,000 - $35,000 USD

3. Wildlife Photographer: A wildlife photographer takes pictures of animals like raccoons in their natural habitats (like the photo you're looking at!). They travel to forests and other wild places to capture beautiful images that help people learn about and appreciate animals. Their photos are used in books, magazines, and websites to teach others.
   - Average Annual Salary: $30,000 - $50,000 USD

NGSS Connections

- Performance Expectation: 3-LS4-3 - Construct an argument that some animals form groups that help members survive.
- Disciplinary Core Ideas: 3-LS4.C - Environmental changes affect organisms, and 3-LS4.D - Being part of a group helps animals obtain food, defend themselves, and cope with changes
- Crosscutting Concepts: Cause and Effect - Students can observe how specific adaptations cause certain survival advantages

Science Vocabulary

* Adaptation: A special feature or behavior that helps an animal survive in its home.
* Habitat: The natural place where an animal lives and finds everything it needs.
* Camouflage: Colors or patterns that help an animal blend in with its surroundings.
* Nocturnal: Active during the night time when it's dark.
* Predator: An animal that hunts and eats other animals.
* Environment: All the living and non-living things around an animal.

External Resources

Children's Books:
- Raccoons by Emily Rose Townsend
- A Raccoon's World by Caroline Arnold
- Raccoon on His Own by Jim Arnosky