

Photo Description

A turtle sits on the ground near some rocks and green plants. The turtle has a hard shell with dark and light patterns. Its head and legs are sticking out of the shell.



Scientific Phenomena

This image represents the Anchoring Phenomenon of animal adaptation for survival. The turtle's shell serves as a protective structure that helps it survive in its environment. The shell is made of bone covered by hard plates called scutes, which grow in rings over time. This adaptation allows the turtle to retract its vulnerable body parts when threatened, demonstrating how living things have special features that help them meet their basic needs for safety and survival.

Core Science Concepts

1. Animal Body Parts and Functions: Turtles have special body parts like shells, legs, and heads that help them survive in their environment.
2. Basic Needs of Living Things: All animals, including turtles, need food, water, air, and shelter to survive and grow.
3. Animal Habitats: Turtles live in specific places that provide everything they need to survive, such as this natural area with plants and shelter.
4. Growth and Change: Living things like turtles grow and change over time, which can be seen in the growth rings on their shells.

Pedagogical Tip:

Use real objects like turtle shells (if available) or high-quality photos to help students make concrete observations. First graders learn best through hands-on experiences and direct observation.

UDL Suggestions:

Provide multiple ways for students to share observations: drawing, verbal descriptions, or acting out turtle movements. This supports different learning styles and communication preferences.

Zoom In / Zoom Out

1. Zoom In: Inside the turtle's shell are bones that are actually part of the turtle's skeleton. The shell grows with the turtle and cannot be removed - it's permanently attached to the turtle's body.

2. Zoom Out: This turtle is part of a larger ecosystem where it interacts with plants, other animals, soil, and water. Turtles help their environment by eating plants and insects, and their movements help spread seeds to new places.

Discussion Questions

1. What do you notice about the turtle's shell and how might it help the turtle? (Bloom's: Analyze | DOK: 2)
2. Where do you think this turtle finds food and water in its habitat? (Bloom's: Apply | DOK: 2)
3. How is a turtle's shell similar to or different from a house where people live? (Bloom's: Compare | DOK: 3)
4. What would happen if a turtle didn't have a shell? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

1. Misconception: Turtles can come out of their shells like taking off clothes.
Clarification: A turtle's shell is part of its body, like our bones, and cannot be removed.
2. Misconception: All turtles are the same and live in the same places.
Clarification: Different types of turtles live in different places - some in water, some on land, and some in both places.
3. Misconception: Turtles are slow because they are lazy.
Clarification: Turtles move slowly to save energy and because their heavy shells make quick movement difficult.

NGSS Connections

- Performance Expectation: 1-LS1-1: Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- Disciplinary Core Idea: 1-LS1.A - All organisms have external parts that they use to perform daily functions.
- Crosscutting Concept: Structure and Function - The shape and stability of structures are related to their function.

Science Vocabulary

- * Shell: The hard covering that protects a turtle's body.
- * Habitat: The place where an animal lives and finds everything it needs.
- * Adaptation: A special body part or behavior that helps an animal survive.
- * Reptile: A type of animal that has scales or hard skin and is cold-blooded.
- * Protect: To keep something safe from harm or danger.

External Resources

Children's Books:

- Turtle, Turtle, Watch Out! by April Pulley Sayre
- The Great Turtle Race by Lisa Bullard
- Box Turtle at Long Pond by William T. George

YouTube Videos:

- "Turtle Facts for Kids" - Educational video showing different types of turtles and their habitats: <https://www.youtube.com/watch?v=hFZFjoX2cGg>
- "How Do Turtles Get Their Shells?" - Simple explanation of turtle shell structure for young learners: <https://www.youtube.com/watch?v=qbJYN152vKs>