Turtle

Life Science | Lesson Guide

1st Grade

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.

Cross-Curricular Ideas

1. Math - Counting and Patterns: Students can count the scutes (plates) on the turtle's shell and look for patterns in the shell's design. They can also sort turtles by size or count how many legs and how many shells they see in pictures. This connects to 1.NBT.A.1 (count to 120).

2. ELA - Descriptive Writing and Storytelling: Students can draw a turtle and label its body parts (head, legs, shell, tail), then write or dictate simple sentences about what the turtle is doing. They could also create a story about "A Day in the Life of a Turtle." This supports 1.W.2 (write informative/explanatory texts).

3. Art - Shell Design and Texture: Students can create their own turtle shells using natural materials like clay, leaves, and seeds, or paint and decorate paper plate shells with patterns inspired by real turtle shells. They can explore different textures by rubbing paper over actual shells or tree bark.

4. Social Studies - Animal Homes and Communities: Students can compare where turtles live to where people live, discussing how different animals need different types of homes. They can create a classroom habitat diorama or map showing where turtles live in your local area.

STEM Career Connection

1. Zookeeper: Zookeepers take care of animals like turtles at zoos and animal sanctuaries. They feed the animals, clean their habitats, and make sure they stay healthy and happy. Zookeepers watch animals carefully to understand their needs. Average Annual Salary: $28,000 - $35,000

2. Wildlife Biologist: Wildlife biologists are scientists who study animals in nature, including turtles. They learn where turtles live, what they eat, and how to protect them from danger. They help keep turtle habitats safe so turtles can survive. Average Annual Salary: $63,000 - $75,000

3. Veterinarian: Veterinarians are doctors who take care of animals. Some veterinarians work with wild animals like turtles, giving them checkups and helping them when they get sick or hurt. Average Annual Salary: $95,000 - $110,000

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