Toad

Life Science | Lesson Guide

1st Grade

Photo Description

This is a dark gray toad sitting on the ground. The toad has bumpy skin with lots of small dots all over it. You can see its big round eye looking up.

Scientific Phenomena

The Anchoring Phenomenon is animal adaptation for survival in different environments. This toad's bumpy, textured skin and dark coloration represent camouflage - a survival strategy that helps it blend into its surroundings like dirt, rocks, and fallen leaves. The bumpy skin also helps the toad absorb water through its skin, which is essential since amphibians can breathe and drink through their skin.

Core Science Concepts

1. Animal Body Parts and Functions: Toads have special body parts that help them survive, like bumpy skin for camouflage and water absorption
2. Living vs. Non-living: Toads are living things that need food, water, air, and shelter to survive
3. Animal Habitats: Toads live in places that meet their basic needs, often near water sources
4. Life Cycles: Toads go through changes as they grow from eggs to tadpoles to adult toads

Pedagogical Tip:

Use the "I Notice, I Wonder" thinking routine with this image. Have students share what they notice about the toad's appearance, then what they wonder about how it lives. This builds observation skills and scientific curiosity.

UDL Suggestions:

Provide multiple ways for students to engage with toad observation - use magnifying glasses, textured materials to feel "bumpy like a toad," and both quiet individual thinking time and partner sharing to accommodate different learning preferences.

Zoom In / Zoom Out

1. Zoom In: The toad's skin has special cells that can absorb water and oxygen directly from the environment. Tiny blood vessels under the bumpy skin help move water and air throughout the toad's body.

2. Zoom Out: This toad is part of a larger ecosystem where it helps control insect populations by eating bugs, while also serving as food for larger animals like birds and snakes. Toads connect land and water environments in their life cycle.

Discussion Questions

1. "What do you notice about this toad's skin and how might it help the toad?" (Bloom's: Analyze | DOK: 2)
2. "If you were designing a hiding place for this toad, what would it look like?" (Bloom's: Create | DOK: 3)
3. "How are a toad's body parts similar to or different from your body parts?" (Bloom's: Compare | DOK: 2)
4. "What do you think this toad needs to stay alive and healthy?" (Bloom's: Apply | DOK: 2)

Potential Student Misconceptions

1. Misconception: "Toads and frogs are the same thing"
   Clarification: While both are amphibians, toads typically have drier, bumpier skin and spend more time on land than frogs

2. Misconception: "You get warts from touching toads"
   Clarification: The bumps on toad skin are natural and cannot give humans warts

3. Misconception: "Toads drink water with their mouths like we do"
   Clarification: Toads can absorb water directly through their skin

Cross-Curricular Ideas

1. ELA - Story Writing: Have students create a simple story about a toad's day. They can draw pictures and dictate sentences about what the toad eats, where it hides, and what it does at night. This connects the toad's behavior to narrative writing skills.

2. Math - Counting and Patterns: Students can count the bumps on a picture of a toad's skin, create repeating patterns using bumpy and smooth textures, or sort images of amphibians by size from smallest to largest. This builds number sense and pattern recognition.

3. Art - Texture Collage: Students can create a toad using mixed materials (sandpaper, bubble wrap, crinkled tissue paper) to represent the bumpy texture of toad skin. This helps them understand texture both visually and tactilely while creating a three-dimensional art project.

4. Social Studies - Animal Habitats Map: Students can create a simple classroom or playground map showing where different animals (including toads) might live and hide. This introduces basic geography concepts and helps students understand how animals are distributed in their local environment.

STEM Career Connection

1. Herpetologist (Animal Scientist): A herpetologist is a scientist who studies frogs, toads, snakes, and lizards. They observe where these animals live, what they eat, and how they stay healthy. They might work in nature centers, zoos, or museums to help protect these animals. Average Salary: $68,000/year

2. Wildlife Educator: A wildlife educator teaches people (like you!) about animals and nature. They might work at zoos, nature centers, or parks, showing visitors animals like toads and explaining how they survive. They help people care about protecting animals and their habitats. Average Salary: $36,000/year

3. Environmental Scientist: An environmental scientist studies how animals and plants live together in nature. They might check if ponds and wetlands are healthy places for toads to live. They work to keep habitats clean and safe for all the animals that need them. Average Salary: $71,000/year

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 Ideas: 1-LS1.A - All organisms have external parts that they use to perform daily functions
- Crosscutting Concepts: Structure and Function - The shape and stability of structures of natural and designed objects are related to their function

Science Vocabulary

* Amphibian: An animal that can live both in water and on land
* Camouflage: Colors or patterns that help an animal hide by blending in
* Habitat: The place where an animal lives and finds everything it needs
* Absorb: To soak up or take in, like how a sponge soaks up water
* Texture: How something feels when you touch it, like smooth or bumpy

External Resources

Children's Books:
- Toad by the Road: A Year in the Life of These Amazing Amphibians by Joanne Ryder
- From Tadpole to Frog by Wendy Pfeffer
- A Frog's Life by Nancy Dickmann