

Photo Description



This dark gray toad sits on the ground covered with leaves and small flowers. The toad has bumpy, wet-looking skin and a big round eye that you can see clearly. Its body looks thick and strong as it rests among the plants on the forest floor.

Scientific Phenomena

The anchoring phenomenon here is animal adaptation for survival in different environments. This toad displays multiple adaptations that help it survive: its bumpy, moist skin helps it breathe through its skin and stay hydrated, its coloring provides camouflage among dirt and leaves, and its body position shows how it remains alert to both predators and prey. The toad's skin must stay moist because amphibians can absorb oxygen and water directly through their skin, which is why they're often found in damp environments like this forest floor setting.

Core Science Concepts

1. Animal Body Parts and Functions: The toad's bumpy skin, prominent eyes, and sturdy legs each serve specific survival purposes
2. Habitat Requirements: Amphibians like toads need moist environments to survive because their skin must stay wet
3. Camouflage and Protection: The toad's dark coloring helps it blend in with soil and dead leaves to hide from predators
4. Life Cycle Connections: Adult toads live on land but started their lives as tadpoles in water

Pedagogical Tip:

Use a "See-Think-Wonder" routine with this image. Have students first observe what they see, then think about what they notice, and finally wonder about questions they have. This builds observation skills while generating student-driven inquiry.

UDL Suggestions:

Provide tactile experiences by bringing in different textured materials (sandpaper, sponges, fabric) for students to feel and compare to how they think the toad's skin might feel. This supports kinesthetic learners and makes abstract concepts concrete.

Zoom In / Zoom Out

1. Zoom In: The toad's skin contains thousands of tiny pores that allow water and oxygen to pass through. Special glands in the skin also produce mucus to keep it moist and sometimes release toxins to protect against predators.
2. Zoom Out: This toad is part of a larger forest ecosystem where it helps control insect populations by eating bugs, while also serving as food for birds, snakes, and small mammals. Toads connect water and land environments in their ecosystem.

Discussion Questions

1. What do you notice about this toad's skin and why do you think it looks that way? (Bloom's: Analyze | DOK: 2)
2. How do you think this toad's body parts help it survive in the forest? (Bloom's: Evaluate | DOK: 3)
3. What would happen if this toad lived in a very dry place like a desert? (Bloom's: Apply | DOK: 2)
4. How is this toad similar to and different from other animals you know? (Bloom's: Compare | DOK: 2)

Potential Student Misconceptions

1. Misconception: "Toads are slimy and yucky." Reality: Toad skin feels more like damp leather and the moisture helps them breathe and stay healthy.
2. Misconception: "Toads and frogs are exactly the same." Reality: While both are amphibians, toads usually have bumpier, drier skin and spend more time on land than frogs.
3. Misconception: "You can get warts from touching toads." Reality: Warts come from viruses that spread between people, not from touching toads.

Cross-Curricular Ideas

1. Math - Counting and Measurement: Have students count the bumps on the toad's skin in the photo, then estimate how many bumps might cover the whole toad's body. Students can also measure and compare the lengths of different toads using rulers or string, creating simple bar graphs to show their findings.
2. ELA - Descriptive Writing and Poetry: Ask students to write descriptive sentences about what they see in the photo using sensory words (bumpy, damp, dark, rough). They could also create acrostic poems using the word "TOAD" where each line describes something about toads or this forest habitat.
3. Art - Camouflage Collage: Students create their own camouflaged animal art by cutting and gluing natural materials (leaves, twigs, soil-colored paper) onto a forest floor backdrop, then hiding a paper toad among the materials to show how camouflage works in nature.
4. Social Studies - Animal Homes Around Our Community: Connect to local environments by taking a nature walk around the school or neighborhood to look for toads, insects, and other small animals. Students create a map showing where different animals live in their own community and compare it to the forest habitat in the photo.

STEM Career Connection

1. Herpetologist - A scientist who studies reptiles and amphibians like toads, frogs, and snakes. Herpetologists observe where these animals live, what they eat, and how they survive. They might work in zoos, nature centers, or universities to help protect these animals. Average Annual Salary: \$45,000 - \$65,000
2. Wildlife Photographer - A photographer who takes pictures of animals in nature to teach people about wildlife and habitats. Like the photographer who took this toad photo, wildlife photographers spend time outdoors finding and photographing animals, then share their images in books, magazines, and online. Average Annual Salary: \$40,000 - \$70,000
3. Habitat Restoration Specialist - A scientist who helps fix damaged habitats so animals like toads can survive and thrive. They might clean up wetlands, plant native plants, or remove pollution to make sure amphibians have safe, healthy homes with clean water and food. Average Annual Salary: \$35,000 - \$55,000

NGSS Connections

- Performance Expectation: 2-LS4-1 - Make observations of plants and animals to compare the diversity of life in different habitats
- Disciplinary Core Ideas: 2-LS4.A - There are many different kinds of living things in any area, and they exist in different places on land and in water
- Crosscutting Concepts: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

- * Amphibian: An animal that can live both in water and on land
- * Habitat: The place where an animal lives and finds everything it needs to survive
- * Camouflage: Colors or patterns that help an animal hide in its environment
- * Adaptation: A special body part or behavior that helps an animal survive
- * Moist: Slightly wet or damp

External Resources

Children's Books:

- Frog and Toad Are Friends by Arnold Lobel
- From Tadpole to Frog by Wendy Pfeffer
- Toads by Gail Gibbons