

## Photo Description



A small green frog sits on a big green leaf. The frog has red eyes and smooth, wet skin. Its body is the same green color as the leaf it sits on.

## Scientific Phenomena

This image represents the Anchoring Phenomenon of Camouflage and Adaptation. The green tree frog's coloration closely matches its leafy environment, which helps it hide from predators and hunt for prey. This color matching is an evolutionary adaptation that has developed over thousands of years. Frogs with better camouflage were more likely to survive and reproduce, passing this trait to their offspring. The frog's bright red eyes also serve a purpose - they can startle predators when suddenly revealed, giving the frog a chance to escape.

## Core Science Concepts

1. Animal Body Parts and Functions: The frog's green skin helps it blend in with plants, while its sticky toe pads help it climb on leaves and branches.
2. Basic Needs of Animals: Like all living things, frogs need food, water, shelter, and air to survive. Their habitat provides all of these needs.
3. Patterns in Nature: Many animals have colors and patterns that match their homes, helping them stay safe from animals that want to eat them.
4. Living vs. Non-living: Frogs are living things that grow, move, eat, and breathe, unlike the non-living leaf they sit on.

### Pedagogical Tip:

Use hand gestures and body movements when teaching about frogs - have students hop like frogs, stick out their tongues to "catch flies," and practice sitting very still to hide like the frog in the photo.

### UDL Suggestions:

Provide multiple ways for students to explore this concept: use real frog sounds, textured materials that feel like frog skin, and picture cards showing different colored frogs in their matching environments to support visual and tactile learners.

## Zoom In / Zoom Out

1. Zoom In: The frog's skin contains special cells called chromatophores that have tiny packets of green pigment. These cells can expand or contract to make the frog lighter or darker green to better match its surroundings.

2. Zoom Out: This frog is part of a larger rainforest ecosystem where many animals use camouflage - from insects that look like sticks to birds with leaf-patterned feathers. The health of the entire forest depends on these predator-prey relationships staying balanced.

### Discussion Questions

1. What do you notice about the frog's color compared to the leaf? (Bloom's: Analyze | DOK: 2)
2. Why do you think it might be helpful for a frog to be the same color as a leaf? (Bloom's: Evaluate | DOK: 3)
3. What other animals have you seen that are the same color as the places where they live? (Bloom's: Apply | DOK: 2)
4. What would happen if this green frog was sitting on a red flower instead of a green leaf? (Bloom's: Predict | DOK: 2)

### Potential Student Misconceptions

1. Misconception: "The frog chose to be green to match the leaf."

Reality: Animals don't choose their colors. Frogs are born with green skin because their parents had green skin.

2. Misconception: "All frogs are green."

Reality: Frogs come in many colors depending on where they live - brown frogs live near dirt and rocks, bright colored frogs live in jungles.

3. Misconception: "The frog can change colors like a chameleon whenever it wants."

Reality: While some frogs can change shades slightly, most cannot dramatically change colors like chameleons do.

### Cross-Curricular Ideas

1. Math - Counting and Patterns: Have students count the number of leaves on a branch, compare the size of the frog to the leaf using "bigger than" and "smaller than" language, and create simple AB color patterns (green, leaf, green, leaf) using construction paper cutouts of frogs and leaves.

2. ELA - Storytelling and Descriptive Language: Students can dictate or draw stories about "A Day in the Life of a Tree Frog," using sensory words like "bumpy," "wet," "smooth," and "slimy" to describe how the frog feels and moves. Read aloud books like *Jump, Frog, Jump!* and have students act out the action words.

3. Art - Camouflage Collage: Students create their own camouflaged animals by gluing torn pieces of colored paper and natural materials (leaves, grass, twigs) onto paper to show how animals hide in their environments. This hands-on activity reinforces the concept of color matching while developing fine motor skills.

4. Social Studies - Animal Homes Around the World: Explore different habitats where frogs live (rainforests, swamps, trees) using a world map or globe. Discuss how people also need different types of homes in different places, connecting animal habitats to human communities.

### STEM Career Connection

1. Biologist - A scientist who studies animals like frogs to learn how they live, grow, and survive in nature. Biologists spend time outdoors watching frogs, taking notes, and learning why some frogs are green and others are different colors. Average Annual Salary: \$65,000

2. Zookeeper - A person who takes care of animals at zoos and animal sanctuaries, including frogs! Zookeepers feed the frogs, clean their habitats, and teach visitors like you about how frogs live and why we need to protect them. Average Annual Salary: \$32,000

3. Environmental Scientist - A scientist who protects natural places like rainforests and wetlands where frogs live. They work to keep frog habitats healthy and safe so that frogs and all the other animals that share their home can survive. Average Annual Salary: \$73,000

### NGSS Connections

Performance Expectation: K-LS1-1 - Use observations to describe patterns of what plants and animals (including humans) need to survive.

Disciplinary Core Ideas:

- K-LS1.C - Animals need food, water, and shelter to survive

Crosscutting Concepts:

- Patterns - Patterns in the natural world can be observed and used as evidence

### Science Vocabulary

- \* Camouflage: When an animal's colors help it blend in and hide in its home
- \* Habitat: The place where an animal lives and finds everything it needs
- \* Adaptation: A special body part or behavior that helps an animal survive
- \* Predator: An animal that hunts and eats other animals
- \* Amphibian: An animal like a frog that can live both in water and on land

### External Resources

Children's Books:

- Red-Eyed Tree Frog by Joy Cowley
- Frogs by Gail Gibbons
- Jump, Frog, Jump! by Robert Kalan