Katydid Camouflage

Life Science | Lesson Guide

2nd Grade

Photo Description

This image shows a katydid (a grasshopper-like insect) resting on green plant stems and leaves. The katydid's body is bright green, which helps it blend in with the surrounding plants. You can see its long legs, wings, and antennae clearly in the photo.

Scientific Phenomena

Anchoring Phenomenon: Camouflage—Why an animal's color and shape help it hide from predators.

The katydid appears green because of natural selection and adaptation. Over many generations, katydids with green coloring survived better than those with other colors because predators had a harder time seeing them among green plants. This trait was passed down to offspring, so today most katydids are green. This is protective coloration—the insect's color matches its environment, making it harder for birds and other predators to spot it. The katydid's long, thin body shape also mimics the stems and leaves it lives on, providing additional camouflage.

Core Science Concepts

* Adaptation: A body part or behavior that helps an animal survive in its environment. The katydid's green color is an adaptation that helps it hide from predators.

* Camouflage (Protective Coloration): When an animal's color, pattern, or shape blends in with its surroundings so predators cannot see it easily.

* Predator and Prey Relationships: Predators (like birds) hunt prey (like katydids). Animals with better camouflage are less likely to be caught, so they survive and have babies that inherit the same helpful traits.

* Inherited Traits: Characteristics that an animal gets from its parents, like green color. Traits that help animals survive are more likely to be passed to the next generation.

Pedagogical Tip:

When teaching camouflage to Second Graders, use a concrete "hide and seek" analogy: "The katydid plays hide and seek with birds every day. Its green color is like wearing a green shirt to hide in the grass!" This relatable comparison helps young learners understand why camouflage matters without overwhelming them with complex evolutionary language.

UDL Suggestions:

To support diverse learners: (1) Provide real specimens or high-quality photos of katydids in different environments; (2) Offer hands-on materials (colored paper, leaves, twigs) so kinesthetic learners can create their own camouflaged insects; (3) Use picture books and video clips alongside text to engage visual and auditory learners; (4) Allow students to respond through drawing, speaking, or acting out predator-prey scenarios rather than only written responses.

Discussion Questions

1. Why do you think the katydid is green instead of bright red or blue? (Bloom's: Analyze | DOK: 2)

2. If a katydid lived on brown tree bark instead of green leaves, what color do you think it would be, and why? (Bloom's: Synthesize | DOK: 3)

3. What animals do you think hunt katydids, and how does being green help the katydid stay safe? (Bloom's: Understand | DOK: 2)

4. Can you think of another animal that is colored to match where it lives? How does its color help it survive? (Bloom's: Apply | DOK: 2)

Extension Activities

1. Camouflage Hunt Game: Hide colored paper cutouts of insects (green, yellow, red, blue) among real plants outdoors or in a classroom nature display. Have students find the insects and discuss which colors were easiest and hardest to find. Connect this to why green katydids are harder for predators to spot on green plants.

2. Design Your Own Camouflaged Insect: Provide students with craft materials (colored paper, markers, pipe cleaners, fabric scraps) and have them create an insect and choose a habitat for it (forest, desert, snow, sand, mud). Students must color and design their insect to match the habitat. Display the insects in their habitats and have classmates guess what the insect looks like before revealing it.

3. Katydid Observation Journal: If possible, set up a live katydid observation station (or show video clips of katydids in nature). Have students draw the katydid and write or dictate observations about its color, where it rests, and how it moves. Encourage them to notice how the katydid's shape and color help it hide.

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 — Every organism has different traits, and sometimes traits help animals survive in their environment (camouflage, color, shape).
* 2-LS4.D — There are many kinds of living things in any area, and they exist in different places because of the traits that help them survive there.

Crosscutting Concepts:
* Patterns — The pattern of green color matching green plants shows how nature provides patterns that help animals survive.
* Structure and Function — The katydid's body shape and color (structure) allow it to hide and survive (function).

Science Vocabulary

* Camouflage: Colors, patterns, or shapes that help an animal hide by blending in with its surroundings.

* Adaptation: A body part or behavior that helps an animal live and survive in its home.

* Predator: An animal that hunts and eats other animals.

* Prey: An animal that is hunted and eaten by other animals.

* Trait: A characteristic or feature of an animal's body, like its color, size, or shape.

* Blend In: To match or mix with the colors and patterns around something so it is hard to see.

External Resources

Children's Books:
The Mixed-Up Chameleon* by Eric Carle — A story about a chameleon that changes colors, exploring color and camouflage in an engaging, illustrated format.
Hiding* by DK Findout (or similar non-fiction picture books about animal camouflage) — Simple, photo-based explanations of how different animals use camouflage.
Who Hides?* by Yuki Kiuchi — A picture book exploring how different animals use camouflage in nature.

YouTube Videos:
* "Camouflage in Nature" - National Geographic Kids (Approximately 5 minutes)
Description: A short, engaging video showing real animals (including insects) using camouflage to hide in their environments. Perfect for building excitement about the topic.
URL: https://www.youtube.com/watch?v=2TmKwRr-5aY

* "How Animals Use Camouflage" - Crash Course Kids (Approximately 4 minutes)
Description: An age-appropriate explanation of why animals are colored the way they are, with clear examples and friendly narration suitable for Second Grade.
URL: https://www.youtube.com/watch?v=EO0F0bCfMRA

Teacher Notes: This lesson uses the katydid as an "anchor" to explore adaptation and camouflage—big ideas in Second Grade life science. By connecting the visible green color to survival advantages, students develop early understanding of natural selection without complex terminology. Encourage outdoor observations and hands-on activities to deepen engagement.