Hummingbird

Life Science | Lesson Guide

Kindergarten

Photo Description

A tiny hummingbird with a long, pointed beak hovers in the air near bright pink flowers. The hummingbird's wings are moving so fast they look like a blur. The bird is using its long beak to drink sweet juice (called nectar) from inside the flowers.

Scientific Phenomena

Anchoring Phenomenon: How can a tiny bird stay in the air without landing?

The Science Behind It: Hummingbirds have special wings that beat incredibly fast—up to 80 times per second! This super-fast wing movement allows them to hover in one spot, fly backwards, and stay perfectly still in the air. Their wings move in a figure-8 pattern, creating lift in both directions. Hummingbirds also have very fast heartbeats and must eat many times a day to fuel their high energy. They visit flowers to drink nectar, which gives them the energy they need to keep flying.

Core Science Concepts

* Animal Adaptations: Hummingbirds have special body parts (long beaks, fast wings, tiny size) that help them survive and find food.

* Relationships Between Organisms: Hummingbirds and flowers help each other. The bird gets food (nectar), and the flower gets help making new flowers through pollination.

* Movement and Energy: Animals need energy from food to move and stay alive. Hummingbirds need lots of food because flying uses lots of energy.

* Observation and Noticing: We can learn about animals by watching what they do and what body parts help them do it.

Pedagogical Tip:

For Kindergarteners, avoid using the term "pollination" directly. Instead, focus on the visible relationship: "When the hummingbird's face touches the flower, yellow powder (pollen) sticks to it. The bird carries this powder to the next flower, and that helps new flowers grow!" Use hand movements and demonstrations to show how wings flap.

UDL Suggestions:

Multiple Means of Representation: Show the image on a large screen and use slow-motion videos of hummingbirds flying so students can actually SEE the wing movement (it's invisible at normal speed). Use different colored flowers to represent different hummingbird "food sources."

Multiple Means of Action & Expression: Allow students to show learning through movement (flapping arms fast to show wing speed), drawing, verbal discussion, or even creating a simple model with craft materials.

Multiple Means of Engagement: Connect to student interests—ask who has seen a hummingbird or has a flower garden at home. Create wonder by asking, "How many times do you think these wings flap in one second?"

Discussion Questions

* "What do you think the hummingbird is doing with its long beak?" (Bloom's: Understand | DOK: 1)

* "Why do you think the hummingbird's wings need to move so fast?" (Bloom's: Analyze | DOK: 2)

* "How do the hummingbird and the flower help each other?" (Bloom's: Analyze | DOK: 2)

* "If a hummingbird couldn't hover in the air, how would its life be different?" (Bloom's: Evaluate | DOK: 3)

Extension Activities

1. Hummingbird Wing Race: Play music and have students flap their arms as fast as they can while moving around the room. Stop the music and ask, "Do you think a real hummingbird gets tired?" Discuss that hummingbirds must eat lots of food to have energy for all that flapping.

2. Flower Feeder Craft: Create a simple bird feeder using a small cup, red ribbon, and sugar water (made safely by the teacher). Hang it outside and observe which birds visit. Take photos or draw pictures of visitors. Discuss why birds come to flowers and feeders.

3. Movement Exploration: Set up a "flower garden" in the classroom using tissue paper flowers on straws. Have students move like hummingbirds—flapping, hovering, flying forward and backward. Then move like other birds (robins, crows) that land and hop. Compare the different movements and discuss how body parts help different animals move differently.

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.A (Structure and Function) - Hummingbirds have a long beak for eating from flowers
- K-LS1.C (Organization for Matter and Energy Flow in Organisms) - Animals eat food to get energy

Crosscutting Concepts:
- Patterns - The pattern of hummingbirds visiting flowers repeatedly
- Structure and Function - The hummingbird's body parts help it find and eat food

Science Vocabulary

* Nectar: Sweet juice inside flowers that hummingbirds drink to get energy.

* Hover: To stay perfectly still in one spot while flying without landing.

* Adaptation: A special body part or behavior that helps an animal survive.

* Wings: The body parts that birds use to fly through the air.

* Pollination: When pollen from one flower is carried to another flower, helping new flowers grow.

External Resources

Children's Books:
- Hummingbirds by Gail Gibbons (excellent illustrations and kid-friendly facts)

- The Hummingbird That Couldn't Fly by Anne Vittur Madison (story-based with illustrations)
- National Geographic Little Kids First Big Book of Animals by National Geographic (features hummingbirds alongside other animals)

YouTube Videos:
- "Hummingbird in Slow Motion" by Brave Wilderness (2 minutes) - Shows hummingbird wing movement in slow motion so you can actually see the flapping. https://www.youtube.com/watch?v=_-8sKc3uGJw

- "How Do Hummingbirds Fly?" by National Geographic Kids (3 minutes) - Animated explanation of hummingbird flight with colorful visuals perfect for young learners. https://www.youtube.com/watch?v=N7A5X5aDcY8