Bumble Bee

Life Science | Lesson Guide

2nd Grade

Photo Description

This image shows a bumblebee visiting a bright pink and red flower with yellow stamens. The bumblebee has a fuzzy, round body with yellow and black stripes, dark wings, and you can see yellow dust on its legs. The bee is collecting food from the flower while the flower provides something important in return.

Scientific Phenomena

Anchoring Phenomenon: A bumblebee collecting pollen and nectar from a flower.

Why It's Happening: Bumblebees visit flowers to collect nectar (a sugary liquid) and pollen (a yellow powder) to eat and bring back to their hive. As the bee moves from flower to flower, pollen sticks to its fuzzy body and legs. When the bee visits the next flower, some of that pollen rubs off onto that flower. This is called pollination, and it helps flowers make seeds and fruit. This is a partnership—the bee gets food, and the flower gets help making new plants!

Core Science Concepts

* Pollination: When pollen moves from one flower to another, usually by insects like bees, helping plants make seeds.

* Plant-Animal Relationships: Bees and flowers depend on each other. Bees get food (nectar and pollen), and flowers get help reproducing.

* Adaptations for Survival: Bees have fuzzy bodies that collect pollen, and flowers have bright colors to attract bees.

* Food Chains and Energy: Bees eat nectar and pollen from flowers, and other animals eat bees, connecting all living things in nature.

Pedagogical Tip:

Use this image as a "mystery to solve" in your classroom. Ask students, "Why do you think the bee is visiting the flower?" and "What do you notice on the bee's body?" Let them observe and hypothesize before revealing the pollination concept. This builds scientific thinking and curiosity.

UDL Suggestions:

Provide multiple ways for students to engage with this content: (1) Visual learners can observe and sketch the bee and flower, (2) Kinesthetic learners can act out the bee's movements and the role of pollen, (3) Auditory learners can listen to books about bees read aloud and discuss observations in small groups. Consider using real flowers or safe manipulatives so students with visual impairments can feel the texture and explore the concept tactilely.

Discussion Questions

1. What do you think the yellow powder on the bee's legs is, and why is it there? (Bloom's: Analyze | DOK: 2)
2. How do bees and flowers help each other? (Bloom's: Understand | DOK: 2)
3. What would happen to flowers if there were no bees to visit them? (Bloom's: Evaluate | DOK: 3)
4. Why do you think this flower is bright pink and red instead of gray or brown? (Bloom's: Analyze | DOK: 2)

Extension Activities

1. Flower Observation Walk: Take students outside to observe real flowers and insects visiting them (if available in your area). Have them sketch or photograph flowers they see and mark what colors they are. Discuss why certain flowers attract certain insects. Safety Note: Keep a safe distance; never touch nests or provoke insects.

2. Pollen Transfer Simulation: Give each student a small paintbrush (to represent a bee) and a plate with cocoa powder or cinnamon (to represent pollen). Have them "visit" paper flowers by brushing the powder onto them, then visiting other "flowers." Observe how the powder transfers. Discuss: "Is the pollen moving like it does in real life?"

3. Bee and Flower Role Play: Assign students roles as bees or flowers. Have the "bees" walk around the classroom to "flowers," and students can physically exchange small paper cutouts or tokens representing pollen. This kinesthetic activity reinforces the pollination concept and plant-animal relationships.

NGSS Connections

Performance Expectation:
2-LS2-1: Plan and conduct investigations to provide evidence that plants get the materials they need for growth chiefly from air and water.

Disciplinary Core Ideas:
* 2-LS2.A (Interdependent Relationships in Ecosystems) – Students understand that plants depend on animals like bees for pollination and reproduction.
* 2-LS4.D (Biodiversity and Humans) – Students recognize that plants and animals have specific traits that help them survive in their environments.

Crosscutting Concepts:
* Patterns – The pattern of bees visiting flowers is regular and predictable in nature.
* Structure and Function – The bee's fuzzy body structure allows it to carry pollen; the flower's bright colors function to attract bees.

Science Vocabulary

* Pollen: A yellow powder made by flowers that helps make new plants (seeds).

* Nectar: A sweet liquid inside flowers that bees drink for food and energy.

* Pollination: When pollen moves from one flower to another, helping flowers make seeds.

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

* Bumblebee: A large, fuzzy bee that visits flowers and lives with other bees in a colony.

External Resources

Children's Books:

The Bee Tree* by Patricia Polacco – A charming story about a girl following bees to find a honey tree, emphasizing the importance of bees in nature.

Bee* by Isabel Thomas (DK Findout Series) – A beautifully illustrated beginner book with real photos and simple explanations about bee life cycles and pollination.

What Do Bees Do?* by Sam Godwin – A question-and-answer format book that explores how bees live, work, and pollinate flowers.

YouTube Videos:

* "How Do Bees Make Honey?" by National Geographic Kids (approximately 5 minutes) – https://www.youtube.com/watch?v=AW15bAz1sak – Shows how bees visit flowers, collect nectar, and return to the hive. Colorful and age-appropriate.
* "Pollination for Kids" by Crash Course Kids (approximately 4 minutes) – https://www.youtube.com/watch?v=tKzxD7u0lRs – A fun, animated introduction to pollination with clear explanations perfect for second graders.