

Photo Description

A honey bee lands on a purple flower to collect food. You can see yellow dust (called pollen) sticking to the bee's fuzzy body. This bee is helping the flower make seeds while getting food for itself!



Scientific Phenomena

Anchoring Phenomenon: A bee visiting a flower and transferring pollen

Why This Happens:

Bees need nectar (a sweet liquid) and pollen (tiny yellow grains) for food. As the bee moves from flower to flower, pollen sticks to its hairy body. When the bee visits another flower, some pollen rubs off onto that flower. This helps flowers make seeds and new plants grow. This process is called pollination, and it's a win-win: the bee gets food, and the flower gets help reproducing. Many plants depend on bees and other insects to spread their pollen because plants cannot move on their own.

Core Science Concepts

1. Plants need help to make seeds: Flowers use pollen to create seeds, but pollen must travel from one flower to another flower. Many plants rely on animals like bees to carry pollen for them.
2. Insects and plants work together: Bees visit flowers to eat nectar and pollen (food), and flowers benefit by having their pollen spread. This is an example of a helpful relationship between two living things.
3. Pollen is a powder that sticks: Pollen is yellow dust made by flowers. It clings to the bee's fuzzy body, like dust sticks to a sticky surface. This helps move pollen from place to place.
4. Different animals pollinate different plants: Bees are excellent pollinators, but butterflies, hummingbirds, and other insects also help spread pollen. Different flowers attract different pollinators.

Pedagogical Tip:

When teaching pollination to second graders, use the analogy of "moving pollen like mail delivery." Ask students: "If flowers are houses and pollen is mail, what is the bee?" This concrete comparison helps young learners understand the abstract concept of a helping relationship between living things without overwhelming them with complex biology.

UDL Suggestions:

Representation: Provide visual supports like enlarged images of pollen under a simple magnifying glass or projected close-up photos so all students can see the yellow dust clearly. Use multiple colors of yarn or string to physically model pollen transfer from flower to flower. Action & Expression: Allow students to demonstrate understanding through hands-on activities (like moving pom-poms between paper flowers) rather than written work. Offer choice in how they show learning: drawing, acting out the bee's journey, or arranging a flower sequence. Engagement: Connect to students' direct experiences: "Have you ever seen a bee on a flower? What do you think it was doing?" This personalizes the phenomenon.

Discussion Questions

1. What do you think the bee is doing on the flower? (Bloom's: Remember | DOK: 1)
2. How does the yellow powder (pollen) help both the bee and the flower? (Bloom's: Analyze | DOK: 2)
3. If there were no bees visiting flowers, what might happen to the plants? (Bloom's: Evaluate | DOK: 3)
4. What other animals might help move pollen from flower to flower like bees do? (Bloom's: Create | DOK: 3)

Extension Activities

1. Pollen Transfer Simulation: Give each student a paper flower and a small paintbrush. Have them dip the brush in yellow powder or glitter (representing pollen) and transfer it from one paper flower to another. Discuss how the fuzzy bee's body works like the paintbrush. Students can create their own flower garden and act as "bees" moving pollen between flowers.
2. Bee and Flower Movement Activity: Play music and have students move around the classroom as bees, visiting flower stations (created by other students). At each station, students pick up a small pom-pom or yarn "pollen" and drop it at the next station. This physically demonstrates how pollen travels and connects movement to the concept of pollination.
3. Flower Observation Walk: Take students on a nature walk to find real flowers outside (if available) or show pictures of flowers in your area. Have them look for insects (from a safe distance) and record observations on a simple chart: "What flower? What insect visited? What color is the pollen?" This builds observation skills and connects the lesson to their local environment.

NGSS Connections

Performance Expectation:

2-LS2-1: Plan and conduct an investigation 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)
- 2-LS2.B (Cycle of Matter and Energy Transfer in Ecosystems)

Crosscutting Concepts:

- Systems and System Models
- Structure and Function

Science and Engineering Practices:

- Engaging in Argument from Evidence
- Developing and Using Models

Science Vocabulary

- * Pollen: Tiny yellow grains made by flowers that help create seeds.
- * Pollination: The process of moving pollen from one flower to another so seeds can grow.
- * Nectar: A sweet liquid inside flowers that bees drink as food.
- * Bee: An insect with a fuzzy body that collects pollen and nectar from flowers.
- * Flower: The colorful part of a plant that makes pollen and seeds.

External Resources

Children's Books:

- The Bee Tree by Patricia Polacco (A story about a community working together to find honey, with beautiful illustrations of bees and flowers)
- Bee: A Life by Melanie Arwin (Simple, gorgeous illustrations showing the bee's life and relationship with flowers)
- From Flower to Bee by Kate Riggs (Short, fact-filled picture book perfect for second graders about pollination)

YouTube Videos:

- "Pollination for Kids" by National Geographic Kids — Simple, colorful animation showing how bees pollinate flowers with fun facts. Duration: ~3 minutes. https://www.youtube.com/watch?v=VzxZuUe_6bA
- "What Do Bees Do?" by Crash Course Kids — Engaging introduction to bees' role in nature with clear, kid-friendly explanations and real footage. Duration: ~4 minutes. <https://www.youtube.com/watch?v=t-Fb6mVJcDc>

Teacher Note: This lesson pairs beautifully with spring gardening projects or visits to local botanical gardens. Second graders are naturally curious about insects and flowers—use this image to spark wonder about the hidden relationships in nature!