

## Photo Description



This image shows a fuzzy bumble bee visiting a bright pink and yellow flower. The bee has yellow and black stripes on its body, dark wings, and you can see yellow pollen dust on its legs and body. The bee is using its long tongue to drink nectar from the flower's center.

## Scientific Phenomena

Anchoring Phenomenon: Pollination—the transfer of pollen between flowers by insects.

Why This Happens: Bumble bees visit flowers to collect nectar (a sweet liquid) and pollen (a fine powder) to eat. As the bee moves from flower to flower, pollen sticks to its fuzzy body. When it lands on another flower, some of that pollen rubs off onto that flower's center. This helps flowers make seeds so new plants can grow. It's a partnership—the bee gets food, and the flower gets help making seeds!

## Core Science Concepts

- Animal and Plant Relationships: Bees and flowers depend on each other. Bees need food from flowers, and flowers need bees to help them reproduce.
- Structures and Functions: The bee's fuzzy body is perfectly designed to collect pollen, and its long tongue is designed to reach deep into flowers for nectar. Flowers have bright colors and sweet nectar to attract pollinators.
- Life Cycles: Flowers need pollination to produce seeds. Those seeds grow into new plants, continuing the plant life cycle.
- Habitats and Ecosystems: Bumble bees are an important part of ecosystems because they help many plants reproduce. Without pollinators, many plants couldn't survive.

### Pedagogical Tip:

Use the "I notice, I wonder, I learned" strategy when showing this photo. Have students first observe ("I notice the bee is fuzzy and covered in yellow powder"), then pose questions ("I wonder why the pollen sticks to the bee?"), and finally explain the science. This builds from observation to understanding—the foundation of scientific thinking.

### UDL Suggestions:

Provide multiple ways to engage with this content: (1) Visual learners benefit from close observation of the photo; (2) Kinesthetic learners can act out pollination by moving around the classroom as "bees," transferring colored flour or craft pom-poms from one "flower" (student) to another; (3) Auditory learners benefit from discussions and read-alouds about pollinators. Consider providing a magnified image or live bee photos for students who need clearer visual access.

### Discussion Questions

1. Why do you think the bee's body is fuzzy instead of smooth? (Bloom's: Analyze | DOK: 2)
2. What would happen to flowers if there were no bumble bees to visit them? (Bloom's: Evaluate | DOK: 3)
3. How does the flower help the bee, and how does the bee help the flower? (Bloom's: Understand | DOK: 2)
4. Can you think of other animals that might help flowers make seeds the same way bees do? (Bloom's: Apply | DOK: 2)

### Extension Activities

#### Activity 1: Pollination Simulation

Students become "bees" and "flowers." Coat students' hands lightly with washable glitter or flour (the "pollen"). As bees, they visit flower students and transfer the "pollen" by touching. Discuss how pollen moves and why it's important. This kinesthetic experience makes the abstract concept concrete and memorable.

#### Activity 2: Flower Dissection and Observation

Provide real flowers (tulips, daisies, or zinnias work well). Have students carefully take apart a flower to locate the pollen-producing parts (anthers) and the part that receives pollen (stigma). Use hand lenses to observe pollen grains closely. Create drawings with labels to document their findings.

#### Activity 3: Create a Pollinator Habitat

Design a classroom garden or window box with flowers that attract bees. Research which flowers are best for pollinators, plant seeds or seedlings together, and observe which insects visit over time. Keep a daily journal with sketches of visiting insects and their behaviors.

### NGSS Connections

#### Performance Expectation:

3-LS1-1: Develop models to describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.

#### Disciplinary Core Ideas:

- 3-LS1.B: Growth and Reproduction of Organisms
- 3-LS4.C: Adaptation

#### Crosscutting Concepts:

- Structure and Function
- Cause and Effect

### Science Vocabulary

- \* Pollination: The movement of pollen from one flower to another, which helps flowers make seeds.
- \* Pollen: A fine yellow powder made by flowers that helps them create seeds.
- \* Nectar: A sweet liquid inside flowers that bees and other insects drink as food.
- \* Pollinator: An animal (like a bee) that carries pollen from flower to flower.
- \* Adaptation: A special feature of an animal's body that helps it survive and do its job.

### External Resources

#### Children's Books:

- The Busy Bee by Patricia Grossman (simple narrative about bee pollination)
- Bee and Me by Alison Jay (poetic exploration of pollination and interdependence)
- From Flower to Bee by Ron Fridell (illustrated life cycle connection)

#### YouTube Videos:

- "How Do Bees Make Honey?" National Geographic Kids (2:45)  
<https://www.youtube.com/watch?v=Ypj6LMI59S8>  
A colorful, child-friendly explanation of bee pollination and honey-making with clear animations.
- "Pollination for Kids" Crash Course Kids (4:12)  
<https://www.youtube.com/watch?v=CQrJX-hI6U8>  
Energetic introduction to how pollinators help plants reproduce with real-world examples.