

## Photo Description



A honey bee lands on a purple flower to drink sweet nectar. Tiny yellow powder called pollen sticks to the bee's fuzzy body. When the bee visits other flowers, the pollen rubs off and helps make new flowers grow.

## Scientific Phenomena

Anchoring Phenomenon: A bee pollinating a flower

Why This Happens: Bees visit flowers to collect nectar (a sweet liquid) and pollen (yellow powder) for food. As the bee moves from flower to flower, pollen grains stick to its hairy body. When pollen from one flower reaches another flower's center, it allows that flower to make seeds and new flowers. This is called pollination, and it's how many plants make babies!

## Core Science Concepts

- \* Living things need each other: Bees need flowers for food, and flowers need bees to spread pollen so they can grow and make seeds.
- \* Pollen is the yellow powder on flowers: Pollen is like a dusty powder that helps flowers make new baby plants.
- \* Flowers attract pollinators: Flowers have bright colors, sweet smells, and nectar to invite bees and other insects to visit.
- \* Animals help plants grow: Bees, butterflies, and other creatures carry pollen between flowers without even knowing they're helping!

### Pedagogical Tip:

First graders are concrete thinkers, so use actual flowers and safe observation activities rather than abstract explanations. Let students look at real flower pollen under a magnifying glass and observe bees from a safe distance. Avoid the word "reproduction"—instead, use "making baby plants" or "growing new flowers."

### UDL Suggestions:

Provide multiple ways for students to engage: (1) Visual learners can observe actual flowers and insects; (2) Kinesthetic learners can act out the bee's dance and pollen transfer with their bodies; (3) Auditory learners can listen to bee sounds and discuss flower colors; (4) English Language Learners benefit from real objects, visual labels, and repeated key vocabulary in simple sentences.

## Discussion Questions

1. Why do you think the bee is visiting this purple flower? (Bloom's: Understand | DOK: 1)

2. What do you think happens to the yellow powder on the bee's body when it visits another flower? (Bloom's: Predict | DOK: 2)
3. How do you think the flower helps the bee, and how does the bee help the flower? (Bloom's: Analyze | DOK: 2)
4. If there were no bees, what might happen to flowers and the seeds they need to make baby plants? (Bloom's: Evaluate | DOK: 3)

### Extension Activities

1. Flower Observation Walk: Take students on a safe outdoor walk to observe flowers, insects, and colors. Have them sketch what they see or collect (with permission) a fallen flower petal to examine with a magnifying glass. Ask: "What do you notice about the flower's color? Does it smell? Do you see any insects?"
2. Pollen Powder Experiment: Use a small paintbrush dipped in cinnamon or flour as "pretend pollen." Have students carefully brush the powder onto a stuffed toy bee, then touch the toy to paper flowers. Students observe and discuss: "Where did the powder go? How does this look like real pollination?"
3. Bee and Flower Role Play: Students act out the bee-and-flower story. Some students are flowers (standing still with arms up), and others are bees (moving around gently). Use yellow stickers or paper as pollen. This kinesthetic activity helps first graders understand the movement and relationship between plants and animals.

### 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 All organisms have basic needs; plants need sunlight, water, air, and nutrients; animals need food, water, air, and shelter.
- 3-LS4.C Plants depend on animals to move pollen or seeds for reproduction.

Crosscutting Concepts:

- Patterns Bees visit many flowers following a pattern.
- Systems and System Models A flower and bee work together as a system.
- Cause and Effect Because bees visit flowers, pollen spreads and new flowers can grow.

### Science Vocabulary

- \* Pollen: Tiny yellow powder in flowers that helps make new flowers grow.
- \* Nectar: A sweet liquid inside flowers that bees drink for food.
- \* Pollination: When pollen moves from one flower to another, helping new flowers grow.
- \* Bee: An insect with a fuzzy body that visits flowers to collect food.
- \* Flower: A colorful plant part that makes seeds and attracts bees and butterflies.

### External Resources

Children's Books:

- The Bee Tree by Patricia Polacco (engaging story about bees and flowers)
- Flowers for Polly by Jan Brett (beautiful illustrations of pollinators)
- Up, Up, Up! How Plants Grow by Erin Merhar (simple concept book)

YouTube Videos:

- "How Do Bees Make Honey?" by National Geographic Kids (2:48)—Shows bees visiting flowers with clear visuals of pollen and pollination. <https://www.youtube.com/watch?v=F4tZKBsXqyE>
- "Pollination for Kids" by Learn Bright (3:15)—Age-appropriate explanation with colorful animations of bees, butterflies, and flowers working together. <https://www.youtube.com/watch?v=xPzrM8XQTSI>