Insect

Life Science | Lesson Guide

Kindergarten

Photo Description

A small insect with orange and black colors is sitting on a white daisy flower. The insect has long thin legs and antennae, and the flower has white petals around a bright yellow center. The insect is visiting the flower to find food.

Scientific Phenomena

The Anchoring Phenomenon shown is pollination in action. The insect (appears to be an assassin bug or similar) is visiting the daisy flower, likely seeking nectar or hunting for prey. While feeding, pollen grains stick to the insect's body and legs. When the insect moves to another flower, it transfers pollen, helping plants reproduce. This mutualistic relationship benefits both the insect (which gets food) and the plant (which gets help reproducing).

Core Science Concepts

1. Living things need food to survive - The insect visits flowers to find nectar or other insects to eat
2. Plants and animals help each other - Flowers provide food for insects, and insects help plants make seeds
3. Body parts have special jobs - The insect's legs help it walk on flowers, and its antennae help it find food
4. Plants have parts that do different jobs - Flower petals attract insects, and the yellow center holds pollen and nectar

Pedagogical Tip:

Use hand motions when teaching about pollination - have students pretend to be bees flying from flower to flower, "collecting" pollen on their hands and transferring it to new flowers. This kinesthetic approach helps kindergarteners understand the concept through movement.

UDL Suggestions:

Provide multiple ways for students to observe insects and flowers: use magnifying glasses, real flowers when possible, high-quality photos, and picture books. Some students may be afraid of insects, so start with photos before introducing live specimens, and always respect students' comfort levels.

Zoom In / Zoom Out

Zoom In: Inside the Flower (Microscopic Level)

If we could shrink down and look inside the yellow center of the daisy with a super powerful microscope, we would see tiny yellow grains of pollen. Each pollen grain is so small you can't see it with just your eyes! These pollen grains have a special job—they help make new flowers and seeds. When the insect walks on the flower, pollen sticks to its sticky legs like glue, even though the insect can't feel it happening.

Zoom Out: The Whole Garden System (Ecosystem Level)

This one daisy flower is part of a bigger garden community. The daisy provides food for many insects—not just this one bug, but also bees, butterflies, and beetles. These insects help many different flowers make seeds. The seeds grow into new flowers that feed more insects. The insects also become food for birds and spiders. Everything in the garden is connected like a team, where plants and animals help each other survive.

Discussion Questions

- What do you notice about the insect's body parts? (Bloom's: Observe | DOK: 1)
- Why do you think the insect chose to land on this flower? (Bloom's: Analyze | DOK: 2)
- How might this insect help the flower? (Bloom's: Apply | DOK: 2)
- What would happen if there were no insects to visit flowers? (Bloom's: Evaluate | DOK: 3)

Potential Student Misconceptions

Misconception 1: "Insects are bugs, and all bugs are bad and will hurt me."
Scientific Clarification: Most insects are helpful friends! They visit flowers to find food, and while they're eating, they help flowers make seeds. Some insects like ladybugs even eat bad bugs that hurt plants. We should watch insects with respect and curiosity, not fear.

Misconception 2: "Flowers make food for themselves, so insects aren't really helping."
Scientific Clarification: Flowers make their own food using sunshine, water, and soil. But flowers need help making seeds and baby flowers. Insects carry pollen between flowers, which is a very important job. Without insects visiting flowers, we wouldn't have as many pretty flowers or fruits and vegetables to eat.

Misconception 3: "The insect is eating the flower and will kill it."
Scientific Clarification: The insect is drinking the sweet nectar (like juice) from the flower, but it's not eating the flower parts. The flower makes nectar as a gift for insects—it's like leaving out a juice box for a visiting friend! The flower is still healthy and happy after the insect visits.

Extension Activities

1. Flower Investigation Station - Provide real flowers (daisies, sunflowers) with magnifying glasses for students to observe flower parts and look for visiting insects
2. Pollinator Pretend Play - Students wear yellow chalk or washable paint on their hands and "visit" paper flowers around the classroom, leaving "pollen" prints
3. Insect Body Parts Craft - Create insects using pipe cleaners, counting to ensure six legs and adding antennae to reinforce insect characteristics

Cross-Curricular Ideas

Math Connection: Counting and Comparing
Have students count the petals on real daisies or photos of daisies. Create a simple graph showing how many petals different flowers have. Students can also count the insect's legs (six!) and compare to other animals they know (birds have 2 legs, spiders have 8 legs).

ELA Connection: Storytelling and Sequencing
Students dictate or draw a story about "A Day in the Life of an Insect" visiting flowers. Create a sequence of pictures showing: insect wakes up !’ insect flies to a flower !’ insect drinks nectar !’ insect flies to another flower !’ pollen spreads. This reinforces the pollination process through narrative.

Art Connection: Nature Collage and Color Mixing
Students create their own daisies using white paper petals and paint the yellow centers. Explore how mixing yellow and white makes light yellow. Display student-made flowers around the classroom to create a "pollinator garden" where children move between flowers like insects.

Social Studies Connection: Community Helpers
Discuss how the insect and flower help each other (cooperation and community). Compare this to how people in a community help each other—the librarian helps us find books, the farmer grows food, the doctor helps us stay healthy. Help students understand that just like insects and flowers work together, people work together too.

STEM Career Connection

Beekeeper
A beekeeper takes care of honeybees and helps them make honey! Beekeepers watch the bees visit flowers, collect pollen, and make delicious honey that people eat. They wear special suits to stay safe and learn all about how bees help flowers grow fruit and vegetables. Beekeepers help nature and give us sweet treats!
Average Annual Salary: $48,000 USD

Gardener/Horticulturist
A gardener plants and cares for flowers, vegetables, and plants. They know all about what plants need to grow big and strong, and they understand how insects help plants. Gardeners create beautiful gardens and grow food for people to eat. Some gardeners work in parks, some have their own gardens, and some work at farms.
Average Annual Salary: $35,000 USD

Entomologist (Insect Scientist)
An entomologist is a scientist who studies insects! They learn about what insects eat, where they live, and how they help plants and nature. Some entomologists go outside to watch insects and take pictures, while others use microscopes to look at tiny bug parts. They help us understand why insects are so important to our world.
Average Annual Salary: $65,000 USD

NGSS Connections

- Performance Expectation: K-LS1-1 - Use observations to describe patterns of what plants and animals need to survive
- Disciplinary Core Ideas: K-LS1.C - Organization for Matter and Energy Flow in Organisms
- Crosscutting Concepts: Patterns - Patterns in the natural world can be observed and used as evidence

Science Vocabulary

* Insect: A small animal with six legs and three body parts
* Pollen: Yellow powder that helps flowers make new seeds
* Nectar: Sweet liquid that flowers make to attract insects
* Pollination: When pollen moves from one flower to another flower

External Resources

Children's Books:
- The Magic School Bus: Inside a Beehive by Joanna Cole
- Waiting for Wings by Lois Ehlert
- The Flower Hunter by William Carlos Williams