Insect

Life Science | Lesson Guide

1st Grade

Photo Description

A small insect with orange and black colors sits on a white flower with a bright yellow center. The insect has long thin legs and antennae that help it move and sense its surroundings. The flower has many white petals arranged in a circle around the yellow middle part.

Scientific Phenomena

The anchoring phenomenon shown is animal-plant interaction for survival needs. The insect is visiting the flower to obtain nectar, which provides energy and nutrients it needs to survive. This represents a mutualistic relationship where both organisms benefit - the insect gets food while potentially helping the plant by transferring pollen as it moves between flowers. This behavior demonstrates how animals have evolved specific structures (like the insect's mouthparts and legs) that help them obtain resources from their environment.

Core Science Concepts

1. Animal Body Parts and Functions: The insect has specialized body parts including legs for walking, antennae for sensing, and mouthparts for feeding that help it survive in its environment.

2. Plant Structures: The flower has specific parts - petals to attract insects, and a nectar-rich center that provides food for visiting animals.

3. Basic Needs of Living Things: Both the insect and plant demonstrate how living things have needs (food, water, shelter) that must be met for survival.

4. Animal Behaviors: The insect exhibits feeding behavior by visiting flowers, showing how animals use behaviors to meet their survival needs.

Pedagogical Tip:

When introducing insect body parts, use the "head, thorax, abdomen" structure but connect it to familiar concepts like "head for thinking and eating, middle for moving, back for digesting" to make it relatable to first graders.

UDL Suggestions:

Provide multiple ways for students to explore this concept by offering magnifying glasses for visual learners, allowing tactile exploration with plastic insect models, and incorporating movement activities where students can "fly" like insects to different flower stations around the classroom.

Discussion Questions

- What body parts does the insect use to move around on the flower? (Bloom's: Apply | DOK: 2)
- How do you think the insect's long legs help it when visiting flowers? (Bloom's: Analyze | DOK: 2)
- What would happen if flowers didn't have bright colors or sweet nectar? (Bloom's: Evaluate | DOK: 3)
- Why do you think the insect chose to visit this particular flower? (Bloom's: Analyze | DOK: 2)

Extension Activities

1. Insect Body Parts Sorting: Provide pictures of various insects and have students sort them by observable features (number of legs, presence of wings, body segments). Students can create a class chart showing common insect characteristics.

2. Flower Investigation Station: Set up a learning station with real flowers (or detailed pictures) where students use magnifying glasses to observe and draw different flower parts. Include flowers of different colors and shapes to discuss why variety might be important.

3. Design an Insect: Have students design their own insect using craft materials, focusing on what body parts their insect would need to get food, move around, and stay safe. Students can explain how each part helps their insect survive.

NGSS Connections

- Performance Expectation: 1-LS1-1. Use materials to design a solution to a human problem by mimicking how plants and/or animals use their external parts to help them survive, grow, and meet their needs.
- Disciplinary Core Ideas: 1-LS1.A - All organisms have external parts that they use to perform daily functions
- Crosscutting Concepts: Structure and Function - The shape and stability of structures of natural and designed objects are related to their function

Science Vocabulary

* Antennae: Special body parts on an insect's head that help it smell, feel, and hear things around it.
* Nectar: Sweet liquid inside flowers that insects and other animals like to eat.
* Petals: The colorful parts of a flower that help attract insects and other animals.
* Insect: A small animal with six legs, three body parts, and usually wings or antennae.
* Pollinator: An animal that helps plants make seeds by carrying pollen from flower to flower.

External Resources

Children's Books:
- The Very Hungry Caterpillar by Eric Carle
- National Geographic Readers: Insects by Gail Tuchman
- From Caterpillar to Butterfly by Deborah Heiligman

YouTube Videos:
- "Insects for Kids | Learn about Bees, Butterflies, Ladybugs and More!" - Educational overview of common insects and their characteristics (https://www.youtube.com/watch?v=Q2z4RynOT9o)
- "How Do Flowers Help Bees?" by SciShow Kids - Simple explanation of flower-pollinator relationships appropriate for young learners (https://www.youtube.com/watch?v=LcErv1MCxyM)