Flower Parts

Life Science | Lesson Guide

4th Grade

Photo Description

This image shows a close-up view of a pink hibiscus flower with its reproductive parts clearly visible. The tall, pale structure in the center is the pistil (the female part), which has a sticky tip and is surrounded by golden stamens with pollen at their tips (the male parts). The bright pink petals frame these important structures that help the flower make new plants.

Scientific Phenomena

Anchoring Phenomenon: Why do flowers have these special structures sticking out in the middle?

Flowers have evolved specialized reproductive parts because plants need a way to create seeds and make new plants. The stamens produce pollen (like plant sperm), and the pistil receives pollen to create seeds (like plant eggs). Many flowers are brightly colored and have these visible structures specifically to attract pollinators—insects like bees and butterflies that help move pollen from flower to flower. This is a partnership between plants and animals that allows both to survive and thrive.

Core Science Concepts

* Flower Structure and Function: Flowers have different parts, each with a specific job. Petals attract pollinators, stamens make pollen, and the pistil receives pollen to create seeds.

* Plant Reproduction: Plants reproduce sexually through flowers. Pollen from the stamens must travel to the pistil for seeds to develop. This is different from how animals reproduce.

* Pollination and Interdependence: Insects visit flowers for nectar and accidentally pick up pollen. When they visit another flower, they transfer pollen, helping plants reproduce. This shows how different organisms depend on each other.

* Adaptation: Flowers have colorful petals, sweet nectar, and visible reproductive structures as adaptations that attract pollinators and increase the chances of successful reproduction.

Pedagogical Tip:

When teaching flower parts, use the analogy of a flower "family": the pistil is like the mom (receives pollen), the stamens are like the dad (makes pollen), and the petals are like the house that attracts visitors. This makes the abstract concept of plant reproduction more concrete and relatable for fourth graders.

UDL Suggestions:

Provide multiple means of representation by offering a labeled diagram of flower parts alongside this photo. Some students may benefit from a 3D model or a real flower they can examine and touch. For students with visual processing challenges, use high-contrast images and large, clear labels. Consider providing a flower dissection kit so kinesthetic learners can explore flower structures hands-on.

Discussion Questions

1. What do you think the colorful petals are for? Why would a flower need to be so bright and pretty? (Bloom's: Infer | DOK: 2)

2. If the yellow powdery stuff (pollen) on the stamens didn't get to the pistil, what might happen to the flower? (Bloom's: Analyze | DOK: 3)

3. How do you think a bee helps this flower make new flowers? (Bloom's: Explain | DOK: 2)

4. Compare this flower to another flower you know. How are their parts the same or different? (Bloom's: Compare | DOK: 3)

Extension Activities

1. Flower Dissection & Labeling: Provide students with fresh flowers (carnations or hibiscus work well). Have students carefully pull apart the flower, identify each part, and create a labeled diagram or glue parts onto a worksheet. Students should count the stamens and note the pistil's location and appearance.

2. Pollinator Observation Garden: If possible, plant native flowers that attract pollinators near your school. Have students observe and record which insects visit which flowers over several days. Create a chart showing the relationship between flower color/shape and the type of insect visitor.

3. Flower Part Function Match Game: Create cards with flower parts (petal, sepal, stamen, pistil) and their functions. Students match parts to functions, then sort by which parts help with attraction, which with reproduction, and which with protection.

NGSS Connections

Performance Expectation: 4-LS1-1: Use evidence to construct an explanation for how the structure of an organism is related to its function.

Disciplinary Core Ideas:
- 4-LS1.A Structure and Function
- 4-LS1.B Growth and Development of Organisms

Crosscutting Concepts:
- Structure and Function
- Systems and System Models

Science Vocabulary

* Pistil: The female part of the flower that catches pollen and makes seeds.

* Stamen: The male part of the flower that makes yellow pollen.

* Pollen: Tiny yellow powder made by stamens that helps flowers make seeds.

* Pollinator: An insect or animal that moves pollen from flower to flower (like bees and butterflies).

* Reproduction: Making new living things of the same kind; for flowers, this means making seeds.

* Pollination: The process of moving pollen from one flower to another, usually by insects or wind.

External Resources

Children's Books:
- From Flower to Fruit by Gail Gibbons (clear, colorful diagrams of flower parts and pollination)
- The Reason for a Flower by Ruth Heller (poetic explanation of flower structure and purpose)
- How Do Plants Get Their Food? by Etta Kaner (includes flower structure and pollination)

YouTube Videos:
- "Flower Parts and Pollination" by Crash Course Kids — A 4-minute overview of flower structure with clear animations. https://www.youtube.com/watch?v=Z5mVsxLJzYA
- "How Do Bees Help Plants?" by National Geographic Kids — Shows real footage of pollination happening. https://www.youtube.com/watch?v=VtNwpAWV7ik