

Pollination

The flower is often the most identifiable part of the plant. Many plants cannot reproduce alone and need a little help from nature. Birds, bees, butterflies, and flies are some of the most common helpers. These helpers are called pollinators and they aid in the complicated process of pollination. In addition to being pretty and smelling wonderful, the flower contains everything necessary to produce a new plant. Once a flower has been pollinated, it can produce seeds!

Pre-Visit Activities

Introduce students to pollinators.

Tell students that most plants need help from pollinators in order to make new seeds. Show students pictures of birds, bees, butterflies, moths, and bats.

Show students flowers of various size. Inform students that there is a direct correlation between the size of the flower and the size of the pollinator.

At the Conservatory

Palm House

Kauai Hibiscus
Gardenia

Sugar From the Sun

Cacao (Chocolate) Tree
Vanilla Vine
Noni Tree

Children's Garden

Sausage Tree

Desert House

Agave
Carrion Flower

Aroid House

Giant Philodendron
Calabash Tree

Show House

Orange Jasmine

Horticulture Hall

Malaysian Orchid
Bird of Paradise

Post-Visit Activities

Discuss how pollinators help create the food that we eat.

Have students list their favorite foods. Have them identify which foods are made possible with the help of pollinators.

Dissect a flower. Remove the petals from the flower and have students identify the petals, female and male organs, and the purpose for each. Have students identify the clues the flower provides on where the pollen may be found.

Research & identify the types of flowers native to your environment. Identify native pollinators.

NGSS:

- 1-LS3-1 Make observations to construct an evidence-based account that young plants and animals are like, but not exactly like, their parents.
- 2-LS2-2 Disperse a simple model that mimics the function of an animal in dispersing seeds or pollinating plants.
- 3-LS1-1 Develop models that describe that organisms have unique and diverse life cycles but all have in common birth, growth, reproduction, and death.
- 4-LS1-1 Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior, and reproduction

Additional Resources:

Unusual pollinators: <http://www.fs.fed.us/wildflowers/pollinators/animals/unusual.shtml>

<http://www.bbc.com/earth/story/20150514-extraordinary-pollinators>

Downloadable pollination workbook: www.pollinator.org/nappc/PDFs/curriculum.pdf

Pollination

What does pollination mean?

What part of the plant gets pollinated?

How does pollination happen?

Identify the pollinator based on the size of the flower.

Cacao Tree

many very tiny white flowers



Bird of Paradise

few very large bright yellow and blue flowers



Sausage Tree

very large red flowers



Noni Tree

small white flowers grouped in clusters



Pollination

Vocabulary

Pollination—the act of moving pollen from the male organs of a flower to the female organs of a flower.

Pollinator—animal or insect that moves pollen from the male organs of a flower to the female organs of a flower.

Flower—the colorful part of a plant that holds the reproductive or seed-bearing organs of the plant.

Petal—the colorful part of the flower.

Pistil—the female organs of the plant.

Stamen—the male organ of the plant.

Anther—the part of the plant that contains the pollen

Fruit—a part of the plant that can house a seed.

Seed—the part of the plant that contains a baby plant and all of the nutrients necessary to begin the growth cycle.

Fertilization—the process of creating a seed or a baby plant.

Germination—the process of the seed shedding its seed coat and becoming a seedling, or baby plant.

Seed coat—the outer shell on a seed that protects the baby plant and nutrients inside.

Talking Points

- ◇ Although all plants reproduce, not all plants require a pollinator to move pollen. Plants can also self-pollinate or use water (i.e. pond plants) or wind to carry pollen from one flower to another.
- ◇ Pollinators are not intentionally pollinating plants. They are attracted to nectar and pollination is an accidental by-product.
- ◇ All nectar is not created equal. Pollinators have a preference of which flowers it will pollinate, based on the smell and the taste of its nectar.
- ◇ The flower to be pollinated dictates the size of the pollinator.
 - ◇ Many pollinators pollinate multiple plants which vary based on their migration patterns.
- ◇ Some flowers contain both male and female parts on the same flower. Some plants will contain flowers with only female parts and other flowers with only male parts. Other plants may contain only male flowers or only female flowers.
- ◇ Insects, birds, and bats are common pollinators, but there are other animals and insects with body adaptations that make them ideal pollinators.
- ◇ Just as plants depend on pollinators to create seeds and make new plants, pollinators depend on the nectar of many different types of plants for nutrients.