

## Cloverbud Investigators: Career Detectives



# Plant Dissection



May

**Background:** Everyone likes to get, look at, and smell pretty flowers but are flowers important? Flowering plants help to sustain life as we know it? Flowering plants play an important role in our food supply. Without flowers we would have no vegetables, fruits, nuts, or grains. What about, coffee, chocolate, honey, medicines, perfumes and all the other by-products we get from the fruits of flowers? In today's lesson, we are going to explore the parts and functions of the flower. We will learn some new terminology, find out how pollination works, and what function it plays in the role of fruit production in plants. Let's start with a closer look at a flower's purpose and parts.

### Parts of the Flower

*Not all plants have flowers but those that do are called flowering plants (angiosperms). Non-flowering plants (gymnosperms) form seeds or spores without the use of a flower. A flower on a plant is sometimes called the bloom and its main job is to help the plant reproduce.*

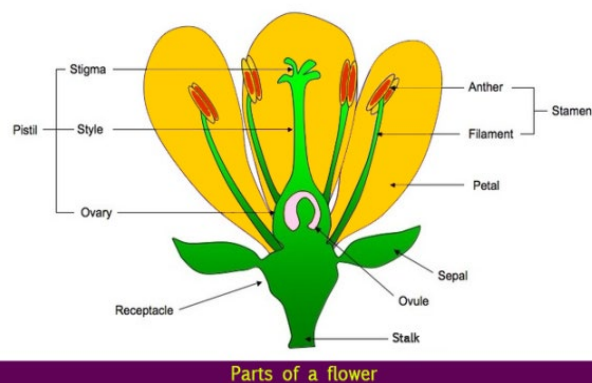
- **Petals** – Usually brightly colored to attract pollinators such as bees, butterflies and humming birds.
- **Sepals** – Small leaf like structures that protect the flower bud when it is developing.

*Flowers have both male and female parts.*

### The Male part – the Stamen

The stamen has two parts,

- **Anthers** – Pollen producing part. Pollen is a fine powder substance that is normally yellow in color and get transferred to other flowers during pollination, either by insects, wind or animals. Pollen is sometimes responsible for allergies in humans and animals.
- **Filaments** – They hold up the anthers.



Parts of a flower



## Female part – the Pistil

The pistil has three parts,

- **Stigma** – Sticky surface at the pistil's top, where the pollen germinates.
- **Style** – Holds up the stigma.
- **Ovary** – Contains the ovules.

**The Ovules** – Become the seed after fertilization by pollen.

In this investigation, we are going to dissect a flower. In order to see all the parts we will take it apart piece by piece and take a closer look at how pollination works.

### Local Career Connections: Careers involving flowers

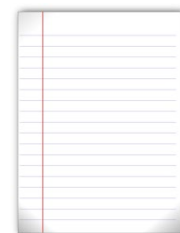
- Landscaper, City Planners, Golf Course Designer, Nature Photographer, etc.
- Orchard Owners, Vegetables Farmers, Nut Producers, Grain Farmers, Nursery Workers, Garden Center Managers, Florist, Tree Farmers, etc.
- Botanist, Environmentalist, Forester, Ecologist, etc.

**May's Mystery:** What do the parts of the flower do for the plants?



### Supplies:

- ♣ Flowers
- ♣ Plastic forceps
- ♣ Plastic Tray (a Styrofoam or paper plate will also work)
- ♣ Clear tape
- ♣ Flower worksheet



**Science Behind:** Flowers play an important role in the life cycle of a plant. Their colors, shapes, scents, and nectar all facilitate pollination, seed growth and seed dispersal. Each part of a flower has a specialized role. There are many flower types and we categorize them into complete, which contain both a male and female parts, or incomplete which means they have just a male or just a female part. The female part of the flower is called the pistil and the male part is called the stamen. The pistil (female part) is made up of three parts: the stigmas, the style and the ovary. The Stamen (male part) consists of the anther or pollen sac and a supporting filament. The flower also contains petals, sepals and nectar glands. The incomplete flower types cannot fertilize themselves and they must rely on the wind or a pollinator such as a bird, bat or insect to carry



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pollen from male flowers to female flowers. Without pollen, a female flower will not produce seeds. For this reason, flowers have developed ways to attract pollinators using color, scents, and nectar. The nectar serves as a food source for pollinators like, bees, butterflies, humming birds and even some bats. These pollinators will come in contact with the sticky pollen of one flower and then transport it to the next flower, thus fertilizing that flower. Once the pollen is on the pistil, it will fertilize the ovules which will form into seeds. Seeds will then grow into the next generation of plants.

***What to Do:*** After discussing the flower's different parts and functions, you can start to dissect the flower.

**Step 1:** Divide into small groups. Each group will get 2-3 flowers, a hand lens, a tray, forceps, and a flower worksheet.

**Step 2:** Pick a flower, and discuss what you see. Use the Flower Parts handout to identify the petals, sepals, anther, stamen, filament, stigma, style and ovary.

**Step 3:** Have investigators complete the "I Observe" section of the handout. Note the color, number of petals, etc.

**Step 4:** Using the hand lens, carefully examine the flowers.

**Step 5:** With careful hands, or using forceps, carefully remove the leaves and place them on the tray.

**Step 6:** The investigators can continue with the other parts like the petals, stamen, and then the stigma.

**Step 7:** Once all the pieces are separated, the investigators can label the parts and discuss the functions.

**Step 8:** Finally, place the flower pieces on the handout and tape them down.

**Go Over Findings:**

Why are flowers important for pollination?

What is the name of the female and male parts?

What is pollen?

Can you name any of the other parts of the flower?

Can you think of a career that works with plants or flowers?

Can you explain what a Botanist is?



**Investigate, Create, & Take: Investigators can take with them:**

- ✓ Handout with the flower pieces
- ✓ A plant/flower
- ✓ Tissue paper flower

**Sources:**

Chartered Institute of Horticulture- Grow: Your Own Career in Horticulture,  
<https://www.horticulture.org.uk/grow-careers/>

The Great Plant Escape- In Search of Green Life,  
<https://extension.illinois.edu/gpe/case1/c1facts2d.html>

Flower Dissection: <http://www.otago.ac.nz/genetics/otago038240.pdf>

Parts of a Flower! Flower Dissection Lesson:

<http://gen.uga.edu/documents/pollination/Parts%20of%20a%20Flower/Parts%20of%20a%20Flower.pdf>

**Additional Links or Resources:**

Video: Parts of a flower and their Functions for kids by Make Me Genius,  
<https://www.youtube.com/watch?v=hZdbJFmEFtY>

Parts of a flower and Pollination, The Dr. Binocs Show, Learn Videos For Kids, Peekaboo Kidz  
[https://www.youtube.com/watch?v=djPVgip\\_bdU](https://www.youtube.com/watch?v=djPVgip_bdU)

Why do we Need Bees? Earth Rangers, <https://www.youtube.com/watch?v=6CxCTyxRFh0>

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# Plant Dissection

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I Observed...

My Flower

**Stigma**

Sticky surface at the pistil's top, where the pollen germinates

**Style**

Holds up the stigma

**Ovary**

Contains the ovules

**Ovules**

Become the seed after fertilization by pollen

**Pistil**

The pistil has three parts

**Anthers**

Pollen producing part

**Filament**

They hold up the anthers

**Stamen**

The stamen has two parts

**Petals**

Usually bright, to attract pollinators such as bees

**Sepals**

Protect the flower bud when it is developing



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