# Flower Dissection

**Adapted from:** Life Lab Science Program, Garden Pollinators—Third Grade Science Exploration

**Overview:** Students will learn about the role of flowers in plant reproduction and dissect flowers to learn their parts.

**Subject area:** Science

**Grade level:** 2nd

**Next Generation Science Standards:**
**4-LS1** From Molecules to Organisms: Structures and Processes

- **4-LS1-1** Construct an argument that plants and animals have internal and external structures that function to support survival, growth, behavior and reproduction.

**Objective:** Students will be able to dissect and illustrate the structure of a flower.

**Prep time:** 20 minutes

**Lesson time:** 30 minutes

**Teacher Background:** Flowers are often grown for their beauty and fragrance, but the reason for a flower's beauty and fragrance is the survival of the plant. Flowers attract bees, wasps, and other insects which carry pollen from one plant to the next. This process is necessary so the plant can produce fruit, which produces seeds from which new plants grow. Watch carefully as a bee visits a flower. As it gathers food to take back to the hive, the bee brushes against the stamens, which are the flower's male reproductive structures. At the tips of the stamens are the anthers, where pollen is produced. For reproduction to take place, the pollen must land on the flower's female structure, the stigma of the pistil. As the bee visits a flower, pollen catches on the tiny hairs covering its body. At the next flower, some of this pollen will rub into the stigma of that flower. Soon after, the flower begins to produce seeds.

<u>Flower Parts</u>

- Petal: attracts insects, birds, and animals
- Sepals: protects the flower during bud stage
- Anther: male reproductive part that contains the pollen
- Filament: male reproductive part that supports the anther
- Stamen: male reproductive part, the anther and filament together
- Stigma: female reproductive part that is a sticky surface which catches and holds the pollen
- Style: female reproductive part that supports the stigma
- Ovary: female reproductive part at the base of the style which contains the female sex cells (ovules)

- Ovules:  female sex cells which develop into fruit
- Pistil:  female reproductive part that contains the stigma, style, and ovary

**Materials needed:**

- Parts of a Flower Diagram (attached)
- A variety of large flowers, one per student or two per group
- Blank paper, one per student
- Magnifying lenses
- Cotton swabs
- Markers, colored pencils, or crayons

**Space needed:** Classroom

**Staff needed:** 1

**Preparation steps:** Pick or purchase a variety of flowers. Ideally, there will be enough for each student to have at least one. Alternatively, each group should be able to work with at least two different flowers. Note:  daffodils or lilies are good flowers for dissecting, as they have all reproductive parts.

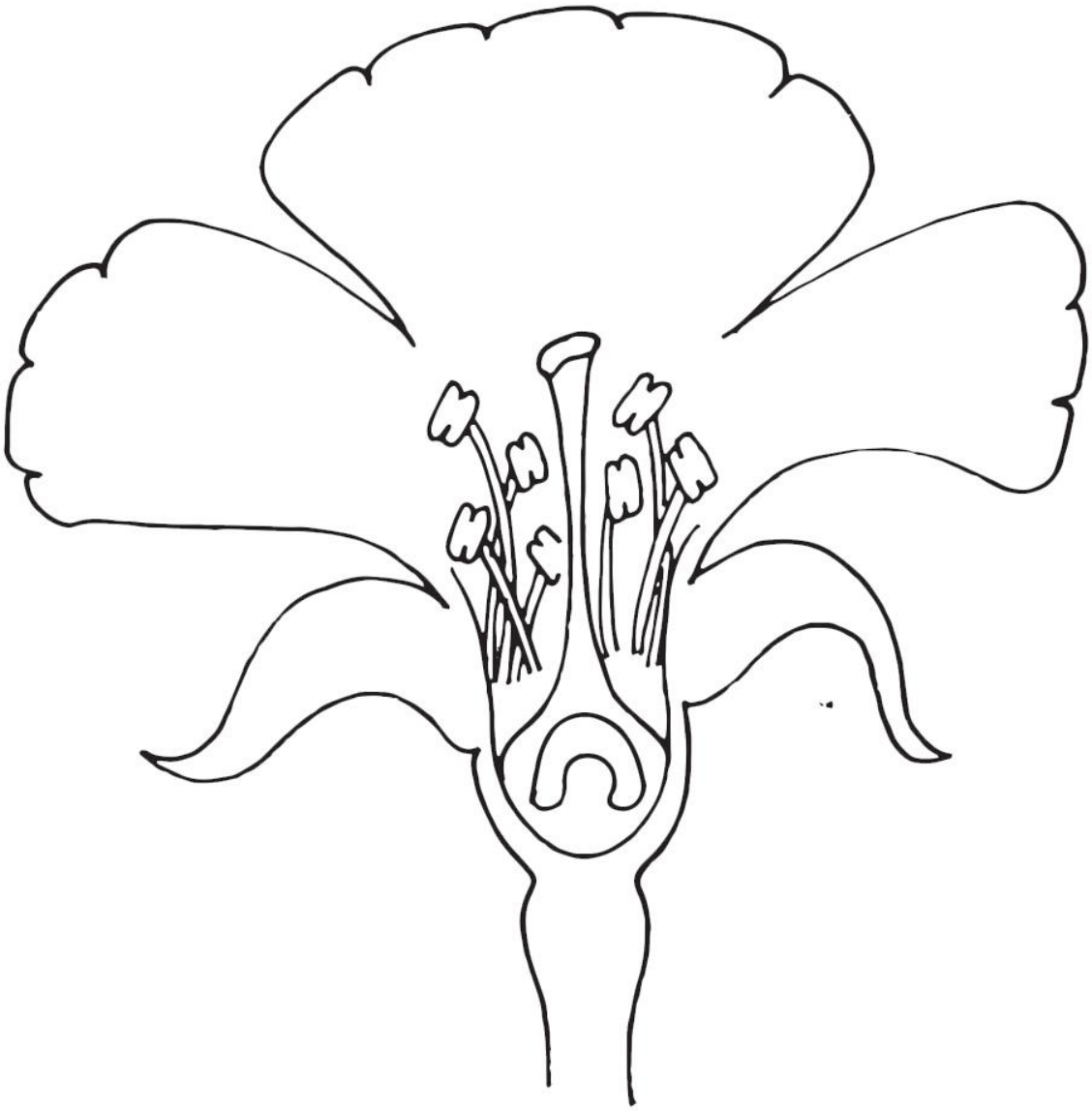
**Presentation steps:**

1. Ask the students, *what are flowers? What does the plant need them for? Do you think flowers interact with other living things? How?  What are flowers like?* (brightly colored, sweet smelling, stinky, delicate)  *What do we call the brightly colored parts of a flower?* (petals) *What kinds of living things have you seen around flowers?* (butterflies, bees, hummingbirds, ladybugs, dragonflies, ants, beetles, flies) *Why are these insects and bugs visiting a flower?* (they are looking for food—pollen, nectar, insects). *Why might a plant provide nectar as a sweet treat?* (to attract pollinators, the insects and bugs that will pollinate the flower)
2. Show the students the Parts of a Flower Diagram or draw it on the board. Explain that flowering plants need pollen from the male part of the flower, the stamen, to be moved to the female part of the flower, the pistil, to fertilize the ovules in order to make seeds and fruit. Most plants require pollen from a different flower or another plant of the same species. Since plants can't move, they rely on animals to transport the pollen for them.
3. Pass out flowers, paper, coloring pencils, cotton swabs, and magnifying lenses to each student or group of students at their tables. Invite students to describe the characteristics of flowers based on the ones in their hands. Encourage individuals to report properties that they experience through all of their senses.
4. Ask students to examine their flowers. *How many parts do they see?* Have students use the hand lens to magnify parts, and the cotton swab to see if parts rub off.
5. Have students draw a picture of their entire flower on their paper.

6. As students take the flowers apart, have them use the Parts of the Flower Diagram to identify each part. Have students draw each part or the cross section of their flowers on their papers. (See example attached.)
7. Encourage students to talk about how each part might help the flower and to write down their ideas next to the part on their papers, or at the bottom.
8. Have students look for depressions at the base of the petals that are filled with a sugary solution called nectar.
9. If students have different types of flowers, ask them to compare parts for similarities and differences.

**Conclusion:** Ask students the following questions to help them relate the flower parts to what they know about pollination: *What parts did you find in your flower? Did you find anything resembling seeds or eggs? Are all flowers the same in certain ways? How are they different? What do flowers do for the plant? What is pollination? Which plant parts are involved in pollination? If a bee helps pollinate a plant, is the bee or the flower that is helped?*

**Parts of a Flower**



# Parts of a Flower