

# FLOWER DISSECTION

*Students dissect a variety of flowers to identify floral structures.*

## ARIZONA SCIENCE STANDARDS 4SC-F3

### OBJECTIVES

Students should:

- Dissect flowers to look at their parts.
- Identify male and female reproductive structures of a flower.
- Identify petals and sepals of a flower.

### MATERIALS

- A copy of *Student Handout - Flower Parts Page* for each student
- A variety of flowers for dissection, about three per student
- Buckets or vases for the flowers
- Clear tape
- Hand lenses
- Pencils or pens

### VOCABULARY

**Anther**  
**Filament**  
**Ovary**  
**Petals**  
**Pistil**  
**Pollen**  
**Sepals**  
**Stamen**  
**Stigma**  
**Style**

## BACKGROUND

Now that your students can conceptualize the process of pollination, they will be ready to observe the floral structures that help make it possible. By dissecting a variety of flowers and identifying their parts, students will better understand the mechanics of pollination.

With Younger Students:

Even the youngest students enjoy dissecting flowers and identifying their parts. With K-2 students, it is best to have them categorize and identify only three main parts:

**petals, male parts, and female parts.**

There is no need to give the names of the individual units that comprise the reproductive structures.

With older students:

You may wish to have them identify the reproductive structures in more detail (i.e. have them find the **anthers** and **filaments** or the **stigma**, **style**, and **ovary** of their flowers.) Refer to the information on floral structure in the teacher background information (pages 5-6) for descriptions of floral structures.

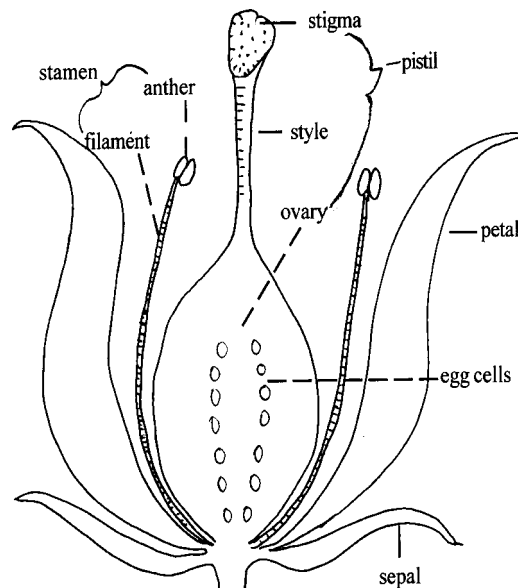
## GETTING READY

Make a copy of *Student Handout - Flower Parts Page* (page 16) for each student and for your own demonstration. Assemble the materials listed in the left margin of this page. Florists will often donate browning or old flowers, which work fine. You can supplement the throw-aways by purchasing a few new specimens that clearly show floral structure. The best flower types to dissect include lilies, tulips, daffodils, alstroemarias, and gladiolus. Avoid daisies, asters, calla lilies, roses, and iris, since their floral structure is not as easy to discern. You may wish to have your students bring flowers from home, as well, if they have flowering plants in their yards. Set the flowers in large buckets or vases.

## DOING THE ACTIVITY

### SETTING THE STAGE

- 1) Recall with your students your discussion of pollination. Ask, "What do pollinators carry from one flower to the next?" (pollen) "What happens when pollen lands on the female part of the flower?" (A fruit with seeds is produced.)
- 2) Explain that today you are going to look at the parts of the flowers that help make pollination happen. Point out the parts on a lily as you discuss them. With older students, you may want to sketch a floral parts diagram on the board and go over the names of the parts using both the diagram and the lily.



Male parts (stamens)  
anther (makes pollen)  
filament

Female parts (pistil)  
stigma  
style  
ovary (eggs inside)

- 3) Ask, "Does the pollen come from the male or female parts of the flower?" (male) Show the pollen-laden anthers suspended on their filaments. Rub some pollen on the students' fingers.
- 4) Point out the sticky stigma on the lily and tell the students that this is where the pollen lands during pollination. Point to

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where the undeveloped seeds are found in the ovary and explain that this develops into the fruit and seeds after pollination.

- 5) Show the petals and sepals, explaining their function. Tell them that on the lily, the sepals look the same as the petals. Pick out another flower with obvious, green sepals to show that sepals can look very different.
- 6) Explain that you are all going to take a flower apart, step by step, to see the different parts up close.

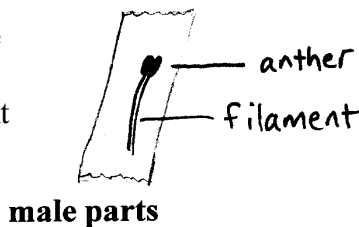
it is sticky. Follow the tube-shaped tissue (style) down from the top with your finger until you reach the rounded base (ovary). Carefully break open the ovary with your fingernail and look closely for seeds or unfertilized eggs with the hand lens. Tape these parts to the “female parts” square on your handout. (Again, you may want to have older students label the parts.)

- 2) Have the students follow the same procedure with their remaining flower(s). Circulate around the room to help identify parts and be sure they are putting them in the right squares.

## DISSECTING FLOWERS

- 1) Give each student a copy of *Student Handout - Flower Parts Page*, pass out tape and hand lenses, and instruct the students to each choose two or three different flowers. Remind them that the group will go through all the steps together. Make sure no one starts tearing apart their flower too soon. Follow these steps:

1. Starting with the sepals and petals, carefully pull apart the flower.
2. You may want to point out the sepals to older students. (Sepals are the first or outermost tissue you encounter on the stem at the base of the flower. They protect the flower bud before it opens and support the flower later. They are often the same color as the petals.)
3. Take one of the petals and tape it in the “petals” square on your flower parts page.
4. Choose one of the male parts (stamens) from the flower. (For kindergarten students, refer to these as “boy” parts.) Look at the pollen inside the anthers on top of the filaments with a hand lens. If there is enough pollen, shake some of the pollen onto your page in the “male parts” square. Take another intact stamen from your flower and tape it in the “male parts” square. (For older students, you may want to have them label the individual parts on their sheet.)



5. Now they should see the female parts (pistil) of the flower. (For kindergarten students, refer to these as “girl” parts.) Feel the top part (stigma) to see if

## DISCUSSION

- 1) When the students have completed their pages, ask them questions about what they observed while dissecting flowers. Discuss possible answers listed in parentheses.
  - Did any of the flower petals have lines or dots on them? What do you think these might be for? (Many flowers have lines or dots on them. These are called nectar guides. The petal acts as a landing pad for the insect and the lines are like a map to show where to find the nectar. Some insects see ultra-violet colors, so the nectar guides look brighter or different to them than they do to us.)
  - Do some flowers have more male parts than others? (Yes. Some flowers have only a few stamens, while others of different kinds have many. Some flowers may contain only male or only female parts, or non-functional parts.)
  - Is the place where the pollen lands on the female part always the same shape? (No. Stigmas can be smooth-edged, fringed, or lobed, depending on the kind of plant the flowers grow on. The different surfaces and shapes help the right kind of pollen stick to them.)
  - Does one flower usually have more male parts than female parts? (yes) Why do you think this might be important? (The role of the male parts is to produce pollen. The more male parts there are, the more pollen they produce, and the more densely they fill the flower. This increases the chance that an animal might touch them and pick up pollen when it comes in search of nectar.)