

Lab Flower Dissection

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Biology 11

Background:

Many plants (angiosperms) contain flowers that contain the sex cells used for the plant to reproduce. The stamen is the male organ for reproduction and is composed of the anther and filament (or stalk). At the tip of the filament is the anther, the organ that produces pollen. Pollen is composed of fine grains that contain the male sex cells. The pistil is the female organ; its parts include the stigma, style and ovary. During pollination, male pollen lands on the stigma, germinates, and the sperm cell travels down the style, and fertilize the eggs in the ovary. The fertilized eggs develop into seeds. Sepals are the leaf-like parts under the petals, they are usually green and photosynthetic. Petals can be all colours, shapes and smells which serve to attract pollinators that aid in the plant's reproduction.

Purpose:

To better understand the parts and functions of an angiosperm and how do they reproduce.

Materials:

The following materials are required: flower, dissecting tray, scalpel, 2 or 3 strips of paper towel, writing utensil, cell phone, glass slide, water, dropper, cover slip, microscope.

*Please note: There will also microscopes set up around the classroom, please leave them there and take your prepared slide to them.

Procedure:

1. Take a picture of your flower from the top and side using one of the lab partner's phones.
2. Remove two petals and place them on your paper towel making sure to label them as such.
3. Draw a biological diagram (see question #1 in analysis questions) of the flower or take a picture of the flower and draw it later. Make sure to label the following in your diagram: sepal, petal, ovary, stigma, style, carpel (pistil), anther, filament and stamen.
4. Create a data table like the one found in analysis question #3 and record the total counts of the structures as you dissect the flower and place them on your paper towel.
5. Continue to dissect the flower by removing all of the sepals and place them on your paper towel labeling them so that you can have a proper count for your data table in step #4.
6. Remove the rest of the petals and place them on the paper towel for counting, this expose the ovary.
7. Remove an anther from your flower and cut it open using a scalpel or scissors (**Note: be very careful using these tools, make sure to only use them on the dissecting tray**).
8. Tap the open end of the anther on a slide and prepare a wet mount of the fine dust that escaped from the anther.
9. Using the microscope, at the best magnification for their size, draw a biological diagram of 2 or 3 pollen grains, see question #5 in the analysis question.

10. Using a scalpel or scissors (**Note: be very careful using these tools, make sure to only use it on the dissecting tray**) make a cross section of the ovary. Draw a diagram showing how the ovules are arranged around a central axis, see question #9 in the analysis questions.



11. Continue to dissect the rest of the flower, placing each of the flower parts on your paper towel and labeling each structure including the ovary.
12. Complete the analysis questions.
13. Please clean up your lab station by cleaning and drying each of the dissection tools you used. Disposing of your flower materials in the dissection room garbage can and washing your dissection tray making sure to put it away correctly. **Do not forget to disinfect and wipe down the tables.**

Analysis Questions

Note: You are to have one good copy as a group to hand in as your lab report; however each member of the lab group will be responsible for the understanding of the information.

1. Create a biological drawing of removed and label the style, carpel (pistil), anther, step #3)
2. Is the flower you dissected a characteristics assist you in
3. Create and complete the count of each structure within #4
4. Did your flower have more you think this might be the

L a b e l	Part	To t a l c o u n t
A	Sep als	
B	Pet als	
C	Sta me n	
D	Ant her	
E	Fila me nt	
F	Pisti l	
G	Stig ma	
H	Styl e	
I	Ova ry	

your flower with the two petals following: sepal, petal, ovary, stigma, filament and stamen. (see procedure

monocot or a dicot? What determining this?

chart found below and record the your flower: (refer to procedure step

male or female structures? Why do case?

5. Create a biological drawing of a pollen grain (see procedure steps #7 to 9 above).
6. Explain why there is such a concern for the ecological state of pollinators (bees, butterflies, etc..) currently?
7. Describe at least one specific adaptation your flower has to help facilitate pollination.
8. Explain why there are always apple orchards and not apple trees alone? What processes or aids would help benefit an orchard?
9. Create a biological drawing of the ovary and its parts. Make sure to label what you can identify. (see procedure #10)