

Name:

Class:

Date:

Activity 13.1A: Plant Structures

Materials Needed

- Colored pencils or fine-point markers (optional)
- Drawing pencils
- Flowering plant stem (one per student)
- Methyl blue
- Microscope (1 per pair of students)
- Razor blade or craft knife (1 per student)
- Slide cover slips
- Slides

Instructions

Your instructor will distribute flowering plant stems for you to examine. Use your observations to answer the worksheet questions.

Safety Note

Take caution when cutting each section of the flower and plant stem. Place the knife/blade in a safe location after each use to prevent injury.

Pre-Lab Questions

1. Draw and label the parts of the flower. (Refer to **Figure 13-11** in your textbook.)

2. Which stem structure carries water up from the roots?

Answer:

3. Which stem structure carries sugar down from the leaves?

Answer:

4. What leaf structure functions to allow water and gases to “leave” the leaf?

Answer:

Section One: Examine the Flower

1. Is the flower complete? Why or why not?

Answer:

2. Is the flower perfect? Why or why not?

Answer:

3. Is the plant a monocot or a dicot? Explain how you determined whether it was a monocot or a dicot.

Answer:

4. Place the flower under the microscope on the lowest power objective. Draw the flower at this magnification.

5. What structures do you see?

Answer:

6. Take one of the stamen and place it under the microscope at medium power, focusing specifically on the anther. Draw the stamen at this magnification.

7. Do you see any new structures? If so, what are they?

Answer:

8. Place the entire pistil under the microscope at medium power. Draw the pistil at this magnification.

9. Carefully remove the stigma from the top of the style and place the stigma topside up beneath the microscope. Draw the stigma at this magnification.

10. Do you see anything that would help in plant reproduction? Explain why the magnified structure could be beneficial to pollination and fertilization.

Answer:

11. Take a small section of the petal and observe it under the highest magnification. Draw the petal section at this magnification.

12. What structures do you see in the petal?

Answer:

Section Two: Examine the Stem

1. Carefully cut a section of the stem. Place the section under the microscope at low power. Draw the stem section at this magnification.

2. Carefully cut a cross-sectional piece (a thin circular slice) of the stem. Place the slice cut side up on the stage. Draw what you see at this magnification.

3. What structures do you see?

Answer:

4. Are these structures organized or scattered through the stem piece?

Answer:

5. What does this tell you about the type of plant you are examining?

Answer:

6. Cut a very thin section of the stem from the larger piece. Place this piece on a slide and add a drop of methyl blue to the slide. Use a cover slip and place the slide under the microscope at medium power. Draw the stem section at this magnification.

7. What structures can you see in the stem?

Answer:

8. Increase the power to the highest objective. Draw the stem section at this magnification.

9. Can you see any new structures? If so, what are they?

Answer: