

Name \_\_\_\_\_ Class \_\_\_\_\_ Date \_\_\_\_\_

Station # \_\_\_\_\_

# Laboratory Investigation 13C

Chapter 13A: The Functions of Plants

## Plants: Design and Function

You may refer to pages 181-188  
in your textbook for a general  
discussion of functions of plants.  
Time required: 25 minutes

### Materials

colored pencils, preserved slides of leaves, microscope, kimwipes, emersion oil

### Part 3

### Procedures and observations of a leaf

Draw a cross section of a monocot leaf from a preserved slide.

Draw five to fifteen cells of each type of tissue (for example, five to fifteen upper epidermal cells, five to fifteen palisade mesophyll cells adjacent to the epidermal cells). Continue until you have a section of the leaf from top to bottom, including the vein. Include guard cells and stomata if possible. Label all parts

<hr style="width: 30%; margin: 0 auto;"/>	Slide Number _____
Name of monocot leaf	
	<hr style="width: 10%; margin: 0 auto;"/>

Draw a cross section of a dicot leaf from a preserved slide.

Draw five to fifteen cells of each type of tissue (for example, five to fifteen upper epidermal cells, five to fifteen palisade mesophyll cells adjacent to the epidermal cells). Continue until you have a section of the leaf from top to bottom, including the vein. Include guard cells and stomata if possible. Label all parts

<hr/> Name of dicot leaf	Slide Number _____
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1. Give the function of the following:

epidermis: \_\_\_\_\_

cuticle: \_\_\_\_\_

spongy mesophyll: \_\_\_\_\_

palisade mesophyll: \_\_\_\_\_

fibrovascular bundle: \_\_\_\_\_

guard cell: \_\_\_\_\_

stomata: \_\_\_\_\_

*Part 4*

**Procedures and observations of a root**

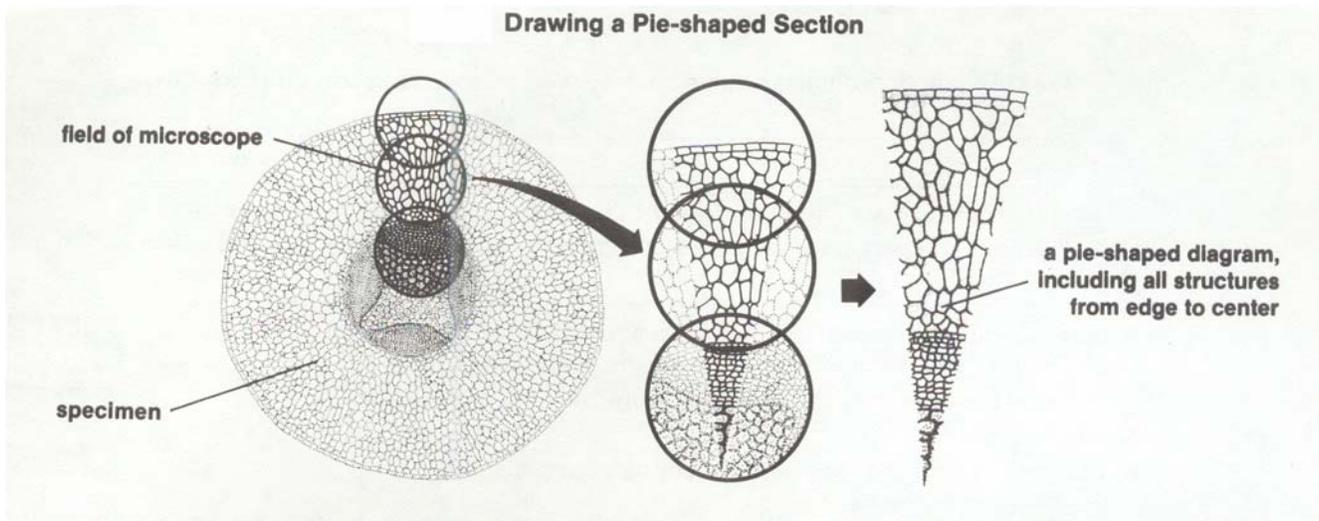
Observe a preserved slide of a Ranunculus root (or any dicot), c.s. Follow these instructions:

Scan the entire slide.

Draw a pie-shaped section of the root. (see example below).

You may need to move the slide while you make this drawing because what you are drawing is probably larger than the field of view of the microscope.

Label the epidermis, root hair, xylem, phloem.



Slide Number \_\_\_\_

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Name of dicot root

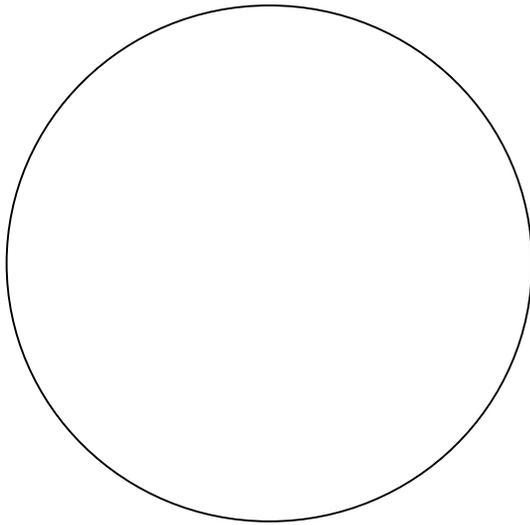
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**Part 5****Procedures and observations of a stem**

Observe preserved slides of a dicot and a monocot stem. Draw and label each. Label (epidermis, fibrovascular bundle, xylem, and phloem).

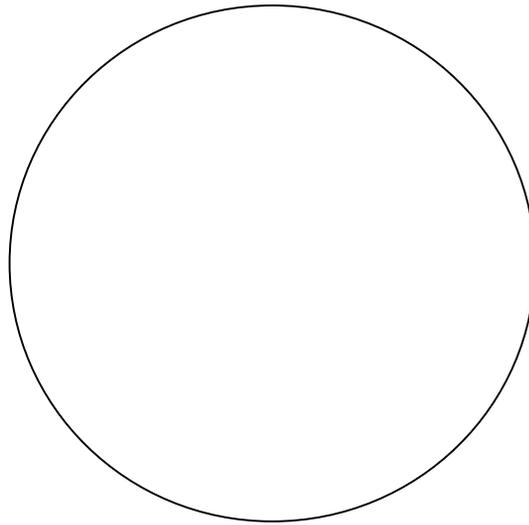
dicot stem



\_\_\_\_\_

Slide Number \_\_\_\_

monocot stem



\_\_\_\_\_

Slide Number \_\_\_\_