

## Biology 103 In-Class Review

### Plant Tissues and Organs

Fill in the table with the visible structures that distinguish monocots from dicots:

	Monocots	Dicots
Number of cotyledons in the seed		
Pattern of veins in the leaf		
Base number of flower parts		
Root system		

Think of plants that you are familiar with and decide if they are monocots or dicots. List them here:

**Monocots**

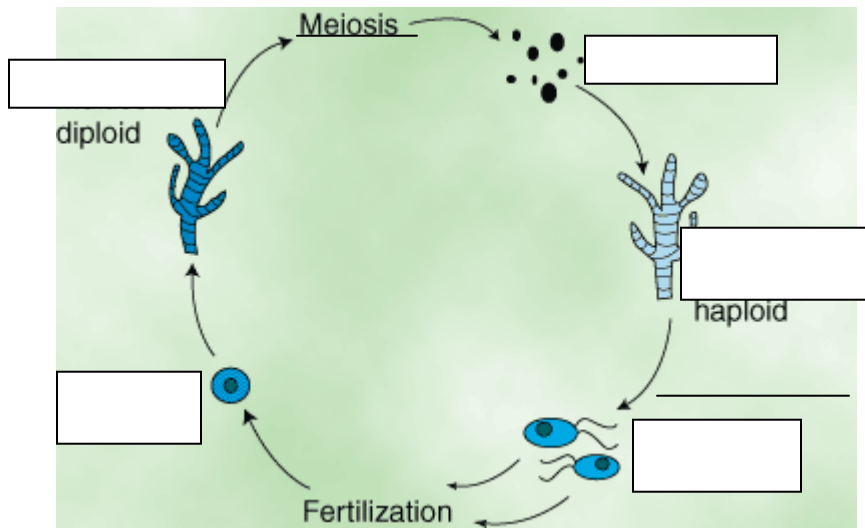
**Dicots**

Fill in the blanks in the table below:

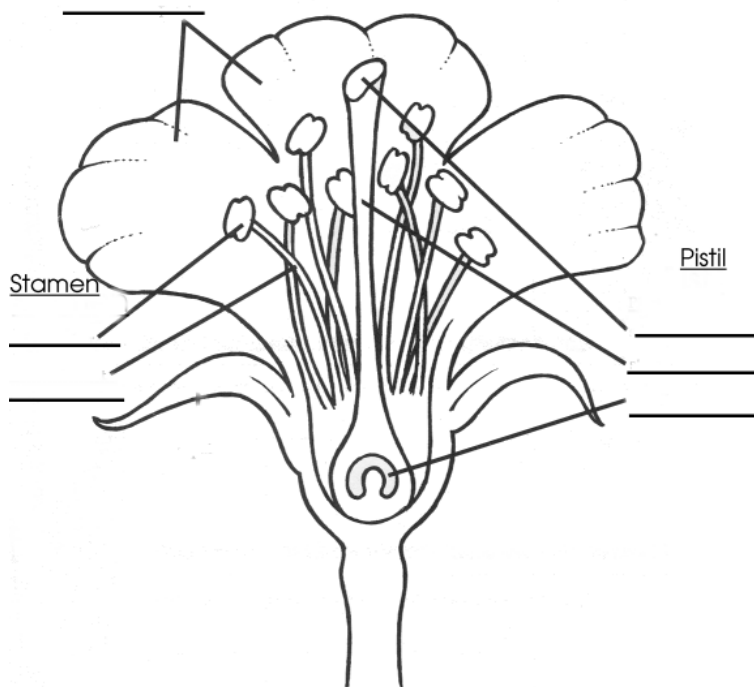
Tissue class	types	functions
Dermal	Cuticle	
		Forms the outer layer of plants, protects the plant, may have hairs or oil glands.
Ground	Parenchyma	
		Flexible support. One example is "strings" in celery stalks.
	Sclerenchyma	
Vascular	Xylem	

### Plant Reproduction

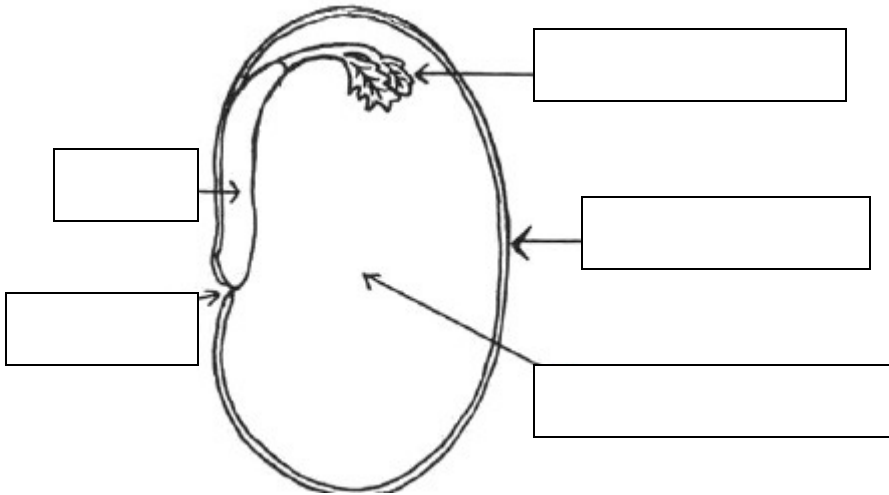
Fill in the blanks in this generalized diagram of the alternation of generations in plants. Fill in the boxes with names of the structures, and blanks with the name of the process occurring.



Fill in the diagram below with the names of the flower parts:



Fill in the blanks in the diagram below with the parts of the bean seed:



Suppose you were planting a wildlife-friendly garden. What shapes, colors, and other features would you look for in flowers to attract each of the following?

Hummingbirds	Butterflies	Moths	Honeybees and other bees

What features of a fruit would show that it is dispersed by:

Wind	Water	Animals	Explosive/mechanical

## Plant Regulation

Fill in the table below with the primary effects of the five classes of plant hormones:

Hormone class	Effects
Auxins	
Gibberellins	
Cytokinins	
Ethylene gas	
Absciscic acid	

Which plant hormone would be most useful if you wanted to:

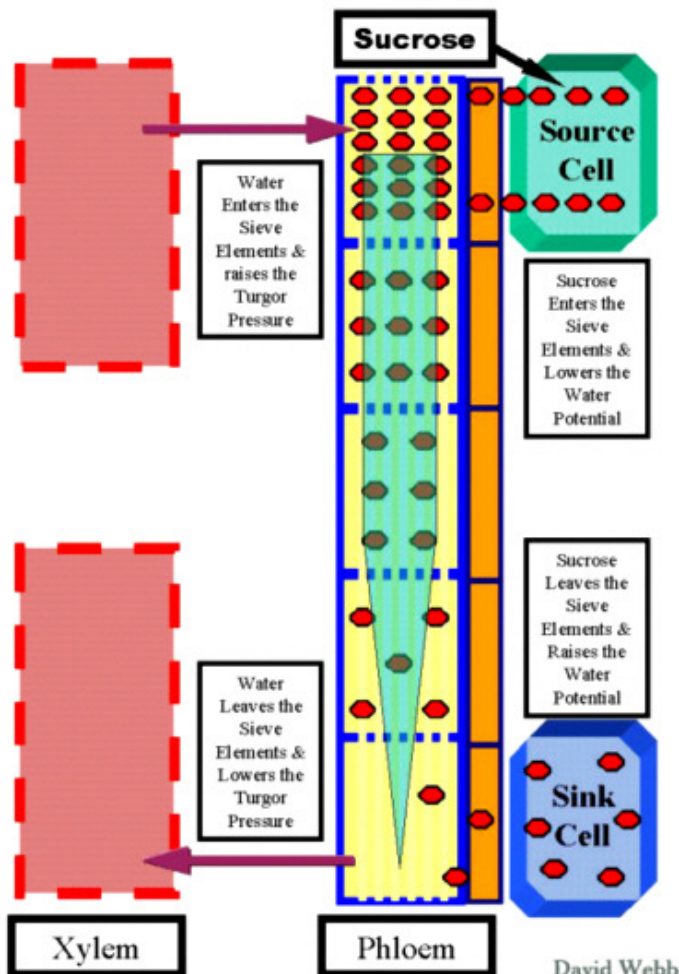
- make cuttings from houseplants grow roots?
- turn dwarf plants into regular-sized plants?
- quickly ripen a bunch of green bananas?
- make a culture of plant cells divide rapidly?
- get some seeds to germinate quickly?
- develop a product to add to the water of cut flowers to make them last longer?

## Plant Transport

What are the roles of the following structures during transpiration?

- root hairs
- endoderm
- xylem vessels and tracheids
- guard cells and stomata in the leaf

Below is a diagram of sugar transport in plants, illustrating the pressure-flow hypothesis. Answer the following questions based on this diagram:



a. How does sugar get from the source cells into the phloem cells?

b. Why does pressure rise in the phloem cells after sugar is moved into them?

c. How is sugar removed from phloem cells into the sink cells?

d. What happens to the pressure in the phloem cells after sugar is removed, and why?