

Name _____

Course/Section _____

Date _____

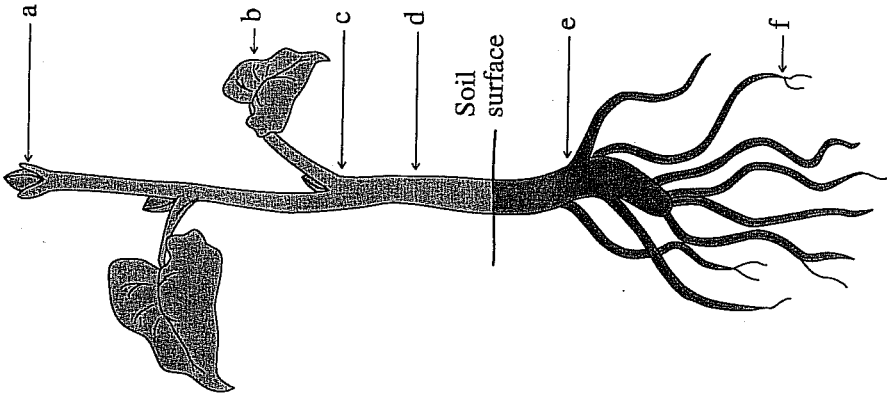
Professor/TA _____



Activity 35.1 How does plant structure differ among monocots, herbaceous dicots, and woody dicots?

The chart on the next page shows a drawing of a generic plant. The arrows indicate various plant parts or organs. In the columns to the right of the plant, draw cross sections of the plant at the points indicated by the arrows.

To help you visualize the differences in structure among different types of plants, in Column I draw the cross sections assuming the plant is a monocot. In Column II draw them assuming the plant is a herbaceous dicot. Finally, in Column III draw the cross sections as if the plant is a woody dicot. Be sure to label your drawings.

Generic plant	Column 1 Cross sections if plant is a monocot	Column 1 Cross sections if plant is a herbaceous dicot	Column 1 Cross sections if plant is a woody dicot
 <p>The diagram shows a generic plant with a stem, leaves, and a root system. Labels with arrows point to various parts: 'a' points to the stem; 'b' points to a leaf; 'c' points to the stem; 'd' points to the stem; 'e' points to the soil surface; and 'f' points to the roots.</p>			

Use the information in your drawings to answer the questions on the next pages.

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1. In Column I, connect the cross sections of the monocot by drawing a line (color 1) from the water transport tissue in one section to the water transport tissue in the next, and so on. Draw another line (color 2) to connect the food transport tissue from one section to the next. Do the same for the herbaceous and the woody dicot cross sections.

2. Use the information in the cross sections to fill in the chart below. *Note:* A distinguishing feature is one that is found in only the given type of organism. For example, a distinguishing feature of mammals is the presence of hair: Hair is a characteristic of all mammals and is not found in any other animals.

	Distinguishing feature(s) of			
	Leaf	Stem	Root	Apical meristem shoot vs root
Monocot				
Herbaceous dicot				
Woody dicot				

3. If cross sections were not available, what other characteristics of the plants as a whole could you use to determine whether each was a monocot, a herbaceous dicot, or a woody dicot?

4. A cartoon shows a man going to sleep in a hammock suspended between two relatively short trees. The second frame of the cartoon shows the man waking 20 years later and finding his hammock 15 feet higher off the ground. Critique this drawing in terms of what you know about the growth pattern of trees.