Name _____ Period _____

Chapter 35: Plant Structure, Growth, and Development

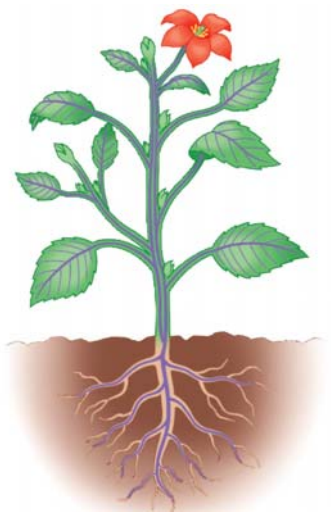
In this unit on plants, the challenge for students will be to learn the new vocabulary. As we work through this unit, you will find an emphasis on labeling and explaining plant diagrams and specific directions for which terms you should know.

Concept 35.1 The plant body has a hierarchy of organs, tissues, and cells

1. This concept is organized into three sections—plant organs, tissues, and cells. Begin by defining a *tissue* and an *organ*.

2. The three plant organs are _____, _____, and _____ .

3. On Figure 35.2, label the ***shoot system***, ***root system***, *apical bud*, *axillary bud*, and *root system*.

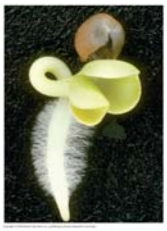


4. Define *root* and then explain the difference between a *taproot* and *lateral roots*.

Root

Taproot and lateral roots

5. This photograph shows the *root hairs* of a radish. What is the function of *root hairs*?



6. What is the advantage of *apical dominance* to a plant?

7. The main function of a leaf is _____ .

8. What are five additional functions that modified leaves can perform?

9. Plants have three types of tissues. Place the name of each tissue type and its function in the table below.

Tissue type	**Function**

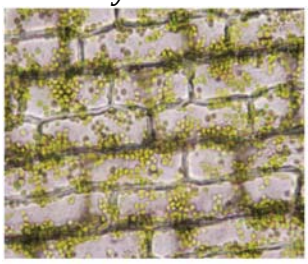
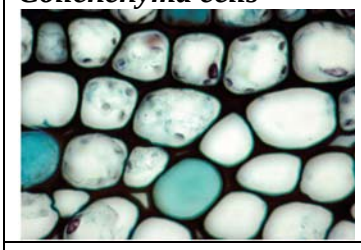
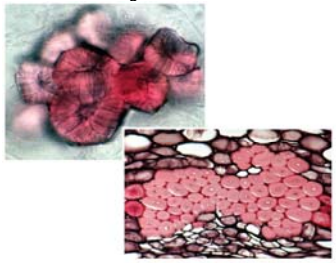
10. What is the function of the *cuticle*?

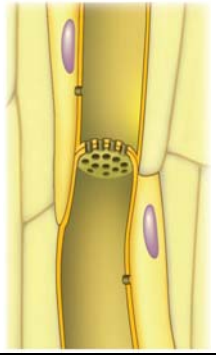
11. *Xylem* conducts _____.

12. Xylem transport tends to be in one direction, but *phloem* transport is more complicated. Explain the pattern of sugar flow in phloem tissue.

13. The two major tissues of the *ground tissue system* are *pith* and *cortex*. Where are they found in the plant?

14. Plants have five major types of cells. Below you will find a picture of each cell type. Give the major function of each cell type. Specific questions may follow your general description of the cell type.

Parenchyma cells 	**Function**
Collenchyma cells 	
Sclerenchyma cells 	
Xylem cells 	Label **vessel elements**, **tracheids**, and **pits**.

Phloem cells 	Label **companion cell**, **sieve tube element**, and **sieve plate**.

15. Compare and contrast the following structures:

Tracheids and vessel elements

Sieve tube elements and companion cells

16. At the end of this first extensive concept, do not lose sight of the big picture. Complete the following summary charts.

The three plant organs are

The three basic plant tissues are

The five basic plant cells are
