

Section 23–5 Transport in Plants (pages 599–602)



TEKS FOCUS: 11A Feedback mechanisms and maintenance of homeostasis; 13B Methods of growth of various plants

This section describes how water and the products of photosynthesis are transported throughout a plant.

Water Transport (pages 599–601)

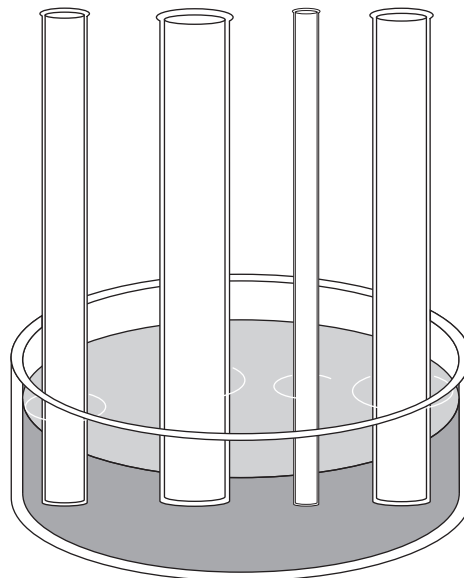
1. What combination of factors provides enough force to move water through the xylem tissue of even the tallest plant? _____

2. Complete the table about attraction between molecules.

ATTRACTION BETWEEN MOLECULES

Type of Attraction	Definition
Cohesion	
Adhesion	

3. The tendency of water to rise in a thin tube is called _____.
4. How does the thinness of a tube affect how high water will rise because of capillary action? Show your answer by drawing how high water would rise in each of the tubes on the illustration.



5. The tubelike structures of what two kinds of cells use capillary action to raise water above the level of ground?
 - a. _____
 - b. _____

6. How do vessel elements form continuous tubes through which water can move freely?

7. What causes the process known as transpiration pull? _____

8. What normally keeps a plant's leaves and stems rigid? _____

9. High transpiration rates can lead to water loss that is severe enough to cause _____.

10. How does the loss of osmotic pressure in leaves slow down the rate of transpiration?

Nutrient Transport (pages 601–602)

11. The movement of sugars out of leaves and through stems to fruit takes place in what kind of vascular tissue? _____

12. Is the following sentence true or false? Many plants pump food down into their roots for winter storage. _____

13. The hypothesis that considers plants in terms of where they produce and use materials from photosynthesis is called the _____.

14. Complete the flowchart about the pressure-flow hypothesis.

Photosynthesis produces a high concentration of sugars in a cell, called the _____ cell.



Sugars move from the cell to phloem, and water also moves into the phloem by the process of _____.



Water moving into the phloem causes an increase in _____.



The pressure causes fluid to move through the phloem toward a cell where sugars are lower in concentration, called the _____ cell.