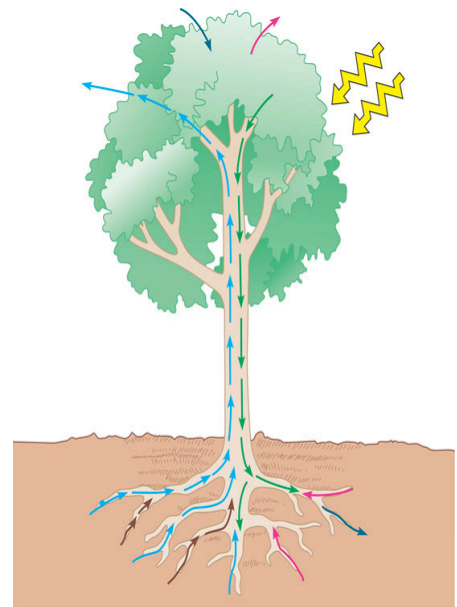


Name _____

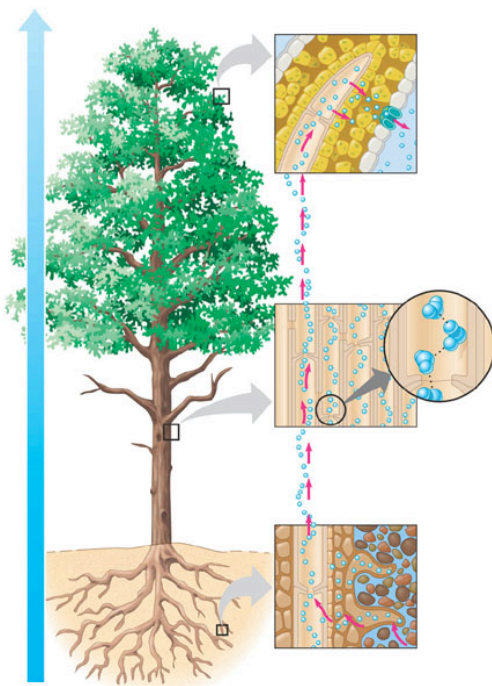
AP Biology**Chapter 36 - Resource Acquisition and Transport in Vascular Plants****Guided Reading Assignment Campbell's 10th Edition****Essential Knowledge**

None

1. Compare and contrast xylem and phloem in vascular plants
2. What drives short-term transport in plants?
3. What drives long-term transport in plants?
4. These terms are a review, but also very critical to know to understand the transportation of nutrients in vascular plants. Define these terms.
 - a. Passive Transport
 - b. Active Transport
 - c. Transport Proteins
 - d. Proton Pump
 - e. Membrane Potential
 - f. Cotransport
 - g. Chemiosmosis
 - h. Water Potential
 - i. Megapascals
 - ii. Solute Potential
 - iii. Osmotic Potential
 - iv. Pressure Potential
5. Use this picture to explain the overview of transport in a vascular plant.



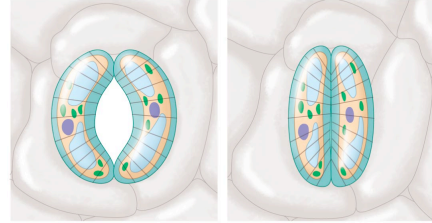
6. Define the following terms:
 - a. Flaccid
 - b. Turgid
 - c. Plasmolyze
 - d. Aquaporins
 - e. Vacuolar membrane (Tonoplast)
 - f. Symplast
 - g. Apoplast
7. Compare and contrast the bulk flow of nutrients in the xylem and phloem.
8. How do root hairs, mycorrhizae, and cortical cells assist vascular plants?
9. What are the roles of the apoplast and the symplast, and how does the Casparian strip relate to these structures?



10. Describe the process of transpiration in your own words and how it affects the transportation of minerals and water.

11. Label the diagram and use it to explain how water potential affects transport of nutrients and minerals through vascular plants.

12. What are stomata and how do they help regulate the rate of transpiration?



© 2014 Pearson Education, Inc.

13. What are some factors that could possible stimulate the opening and closing of stomata?

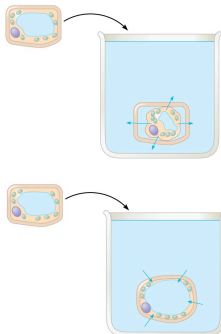
14. What are some evolutionary adaptations that allow xerophytes to survive in arid climates?

15. What is translocation?

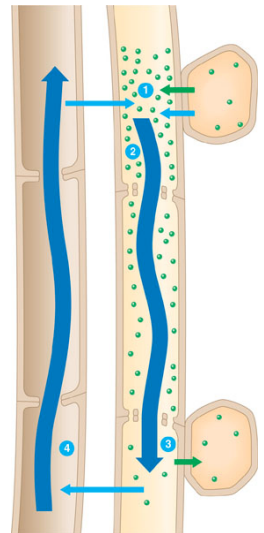
16. Define these terms and give an example

- a. Sugar source
- b. Sugar sink
- c. Transfer cells

17. Label the diagram, describing pressure flow in a sieve tube.



© 2014 Pearson Education, Inc.



18. Make sure you review the formula sheet and are able to calculate water potential. Try concept check 36.2 (answers are in the back of the book)