
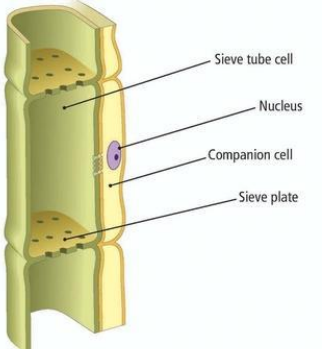



# The plant transport system:

- 1 The roots, stem and leaves form a plant organ system for transporting substances around the plant.
- 2 The **transpiration stream** is the movement of water (through xylem tubes) from the roots of a plant to the leaves. It is caused by the evaporation of water from stomata in leaves (**transpiration**).  
Xylem vessels are hollow tubes strengthened by **lignin**.  
**Stomata** are openings in leaves. They are opened and closed by **guard cells**.
- 3 Root hair cells are adapted for the uptake of water (by osmosis) and mineral ions (by active transport) in the following ways,
  - a) They have a large surface area.
  - b) They have many mitochondria.
- 4 **Translocation** is the movement of sugars (through phloem tissue) around a plant.  
Phloem tubes are elongated cells, with pores in their end walls through which cell sap can move from one phloem cell to the next.

Xylem tubes:	Phloem tubes:	Stomata and Guard cells:
 <p>© Power &amp; Syred 2008</p>	 <p>Sieve tube cell Nucleus Companion cell Sieve plate</p>	 <p>SCIENCE1010 LIBRARY</p>