

Week 7 before class activity

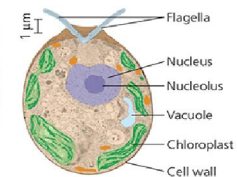
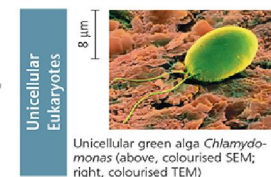
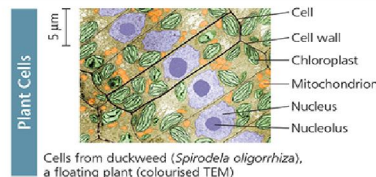
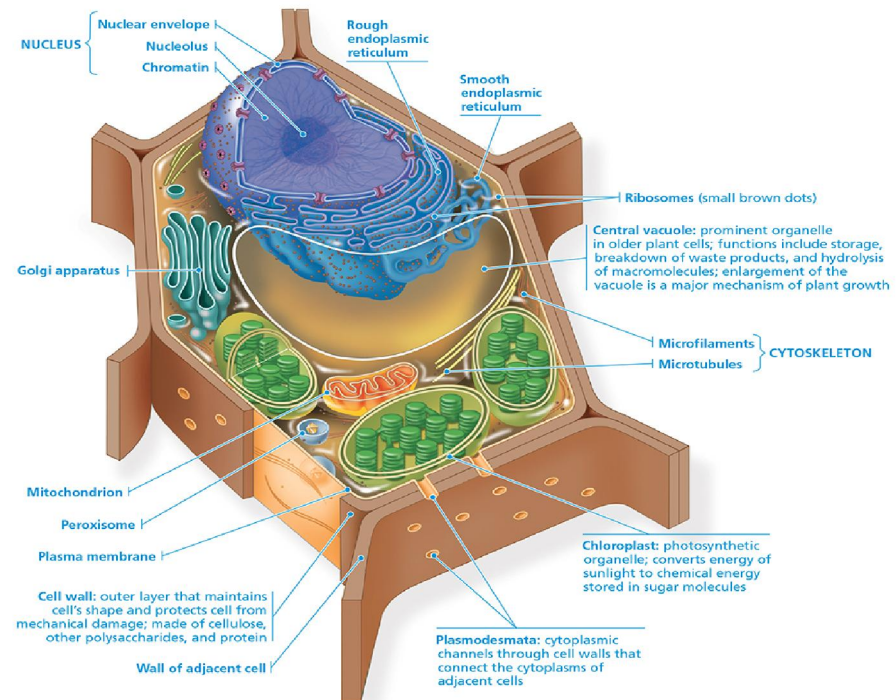
Use your text book and these slides to complete the table provided on moodle.

This material will be tested in class and assessed in the end of trimester exam.

Plant Cells

- Chloroplasts needed for photosynthesis
- Large Central Vacuole
- Cell Wall – contains cellulose
- Plasmodesmata – connective channels between cells

Plant Cell (cutaway view of generalised cell)



Types of Cells in Plants

- Some major types of plant cells:
 - Parenchyma
 - Collenchyma
 - Sclerenchyma
 - Water-conducting cells of the xylem
 - Sugar-conducting cells of the phloem

Types of Cells in Plants

Paranchyma

- Primary walls are thin and flexible
- Look like a typical plant cell (least specialized type of cell)
- Large central vacuole
- Perform metabolic functions of the plant (i.e. photosynthesis)



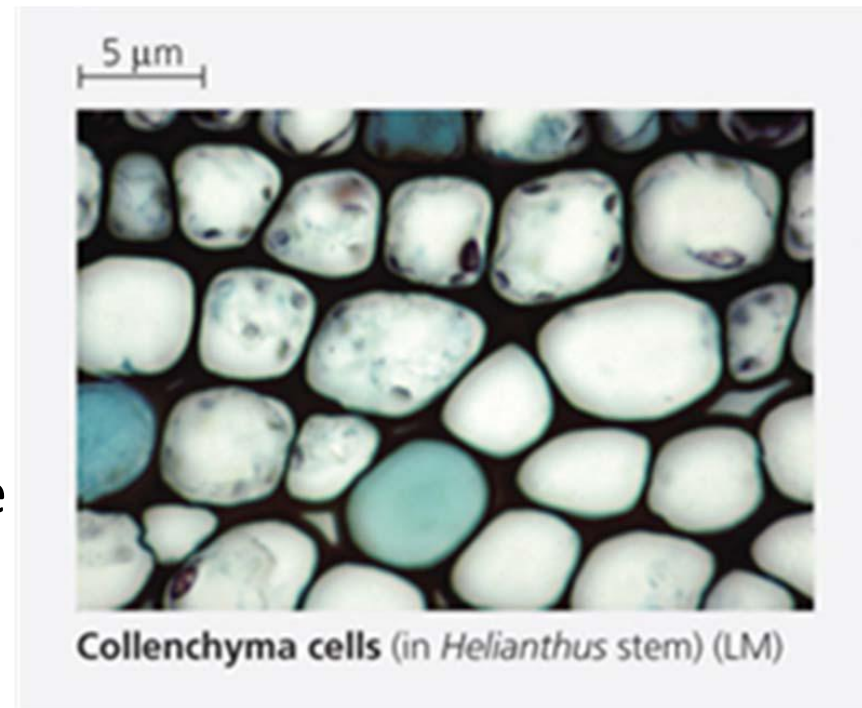
Parenchyma cells in *Elodea* leaf,
with chloroplasts (LM)

60 μm

Types of Cells in Plants

Collenchyma

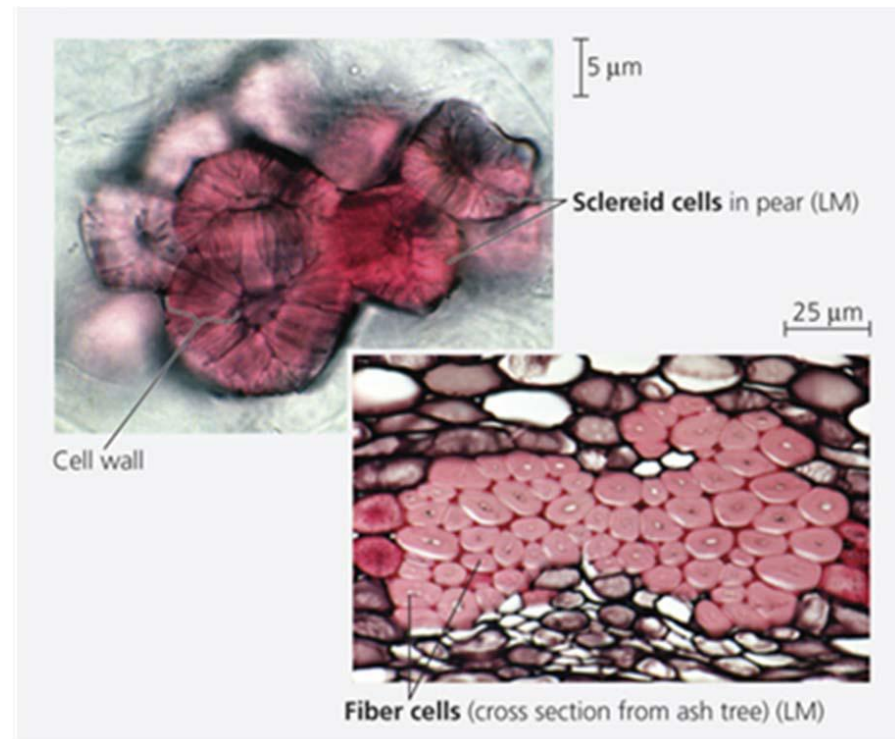
- Grouped in strands or cylinders
- Help support young (still growing parts of the plant shoot
- Thick primary wall
- At maturity these cells are living and flexible, elongating with the stems and leaves they support



Types of Cells in Plants

Sclerenchyma

- Rigid cells that support the plant
- Thick secondary walls (inside primary cell wall)
- Dead at maturity and not flexible
- Occur in regions of the plant that have stopped elongating
- Give the plant rigid support



Types of Cells in Plants

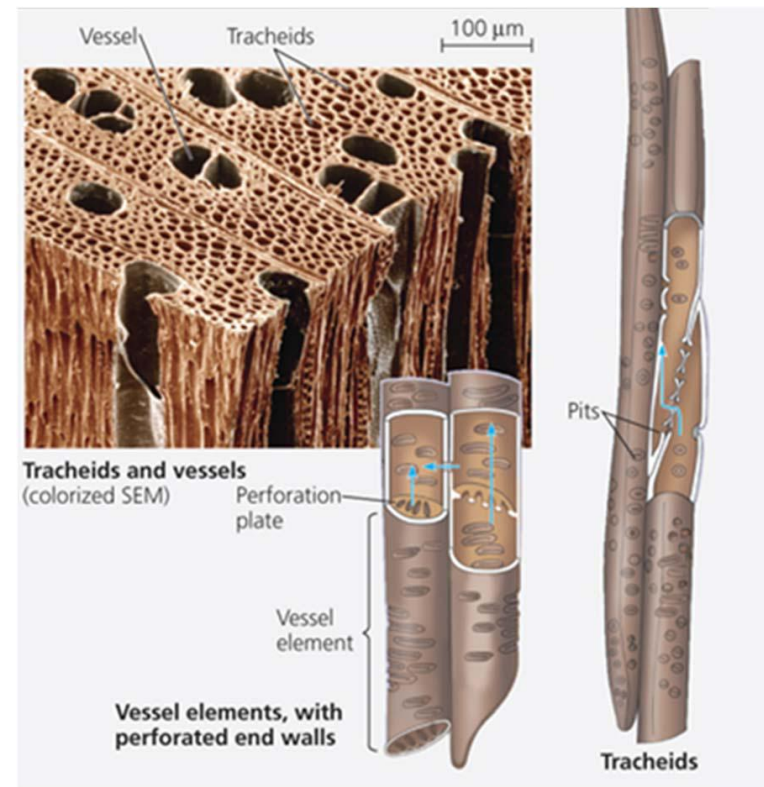
Xylem (water conducting tissue)

- Two types of cells – **tracheids** and **vessel elements**

- Tracheids are found in all vascular plants, vessel elements are found in most angiosperms, some gymnosperms and other seed bearing plants.

- are non living, have thin walls and tapered ends

- Vessel elements are wider, shorter, less tapered



Types of Cells in Plants

Phloem (sugar conducting tissue)

- Two types of cells **sieve tube members** and **companion cells**
- Found in all vascular plants
- Alive at maturity
- **Sieve tubes** lack a nucleus, ribosomes, vacuole and cytoskeleton
- **Companion cells** are connected to sieve tube members with numerous plasmodesmata
- Companion cells help load sugars to sieve tube members

