

Plant & Animal Cells

Cell Theory

1. All living things are made up of cells.
2. The simplest unit of life is the cell.
3. All cells come from other cells.

Cell Organelles

All cells need 1) obtain nutrients 2) get rid of waste 3) use energy 4) store materials 5) move substances around 6) reproduce.

Cells have structures inside them that help perform the above functions. These internal structures are called organelles.

- Cytoplasm – suspends all the organelles. – chemical reactions occur here
- Cell membrane – ‘gatekeeper’ – allows some substances in and not others.
- Nucleus – contains genetic information (DNA)
- Mitochondria – ‘power plants’ – make energy available to cell. Muscle cells have lots!
Process: glucose + oxygen → carbon dioxide + water + ENERGY!!
This is called ‘cellular respiration’
- Endoplasmic reticulum – branching tubes & pockets that transport materials through cell
- Golgi bodies – collect and remove products from cells (make mucus too)
- Vacuoles – fluid filled sac. They can hold unwanted waste or help maintain turgor pressure in plant cells. Amoeba wrap around food and form a food vacuole.
- PLANT ONLY → cell wall – rigid support for plant and protection
- PLANT ONLY → Vacuole – one large vacuole that fills up most of cell – maintains turgor pressure
- PLANT ONLY → chloroplasts – place where photosynthesis occurs. Contain chlorophyll (green!)
Carbon dioxide + water + ENERGY (sun) → glucose + oxygen



?? Did anyone notice that photosynthesis and cellular respiration are opposite reactions??
Hmmmm.....