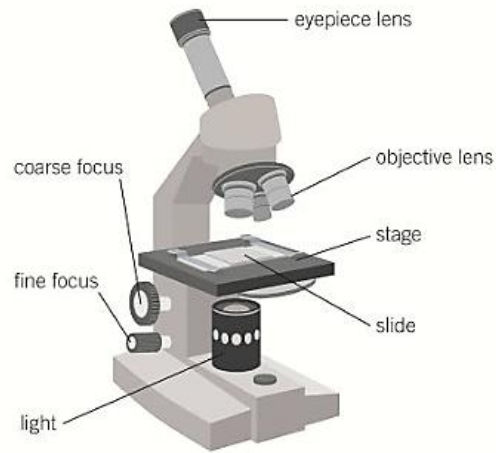
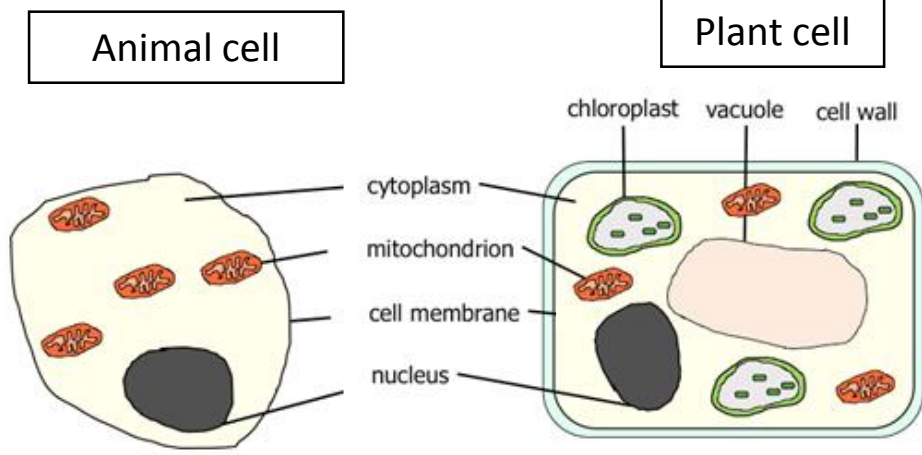


Section 1- The microscope



Section 2- Cell structures



Nucleus	Controls the cell and contains genetic material. This is needed to make new cells.
Cell membrane	This is a barrier around the cell. It controls what can come in and out of the cell.
Cytoplasm	Where chemical reactions take place
Mitochondria	This is where respiration happens to release energy for the cells.
Cell Wall	This provides the cell with structure and support. It is made of a tough fibre called cellulose, which makes the wall rigid.
Vacuole	Contains a watery liquid called cell sap. It keeps the cell firm.
Chloroplasts	Where photosynthesis happens. Contains a green substance called chlorophyll, which traps energy transferred from the sun.

Section 3 - Specialised cells

Stem cells can specialise and become any type of cell in your body. Stem cells are used to replace damaged cells and make more cells for growth.

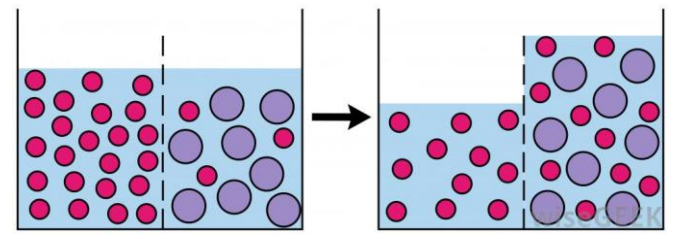
Many cells have adapted their shape and structure so that they are suited to carry out a particular job. They are known as **specialised cells**.

Sperm cell Job: fertilise female egg
 Adaptations: streamlined head and flagella to swim through female reproductive system to egg.

Root Hair Cell Job: absorb water and nutrients
 Adaptations: elongated shape to increase surface area and rate of diffusion.

Section 4 - Diffusion

Substances move in and out of cells by **diffusion**. Diffusion is the movement of particles from a place of high concentration to a place where they are in low concentration until they are evenly spread out.



Water and oxygen diffuse into cells. Diffusion of water is known as **osmosis**.

Section 5- Unicellular organisms

A **unicellular** organism is an organism that is made up of just **one cell**.
 E.g. Amoeba, Euglena

