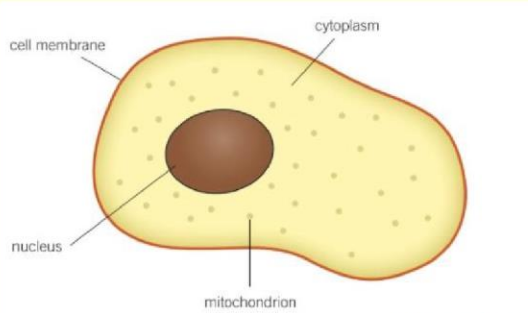
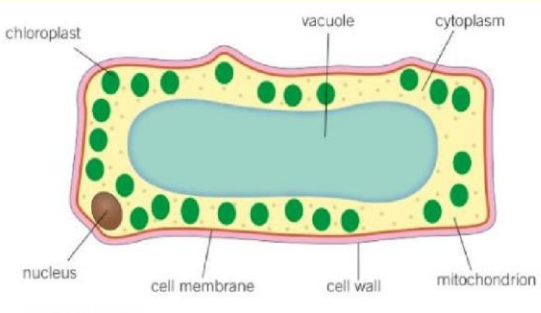
Biology B1.1: Cells

Section 1: Cell Structure		Eukaryotic	
Cell Structure	**Function**	**Animal Cells**	**Plant Cells**
1 Nucleus	Contains **genetic information** that **controls** the functions of the cell.	Y	Y
2 Cell membrane	Controls what **enters** and **leaves** the cell.	Y	Y
3 Cytoplasm	Where many **cell activities** and **chemical reactions** within the cell occur.	Y	Y
4 Mitochondria	Provides **energy** from **aerobic respiration**.	Y	Y
5 Chloroplast	Where **photosynthesis** occurs.		Y
6 Vacuole	Used to **store** water and other chemicals as **cell sap**.		Y
7 Cell wall	**Strengthens** and **supports** the cell. (Made of **cellulose** in plants.)		Y

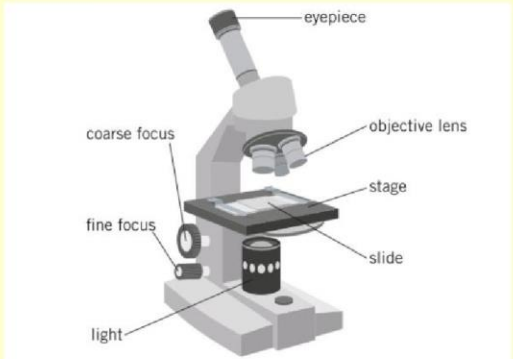


▲ An animal cell.

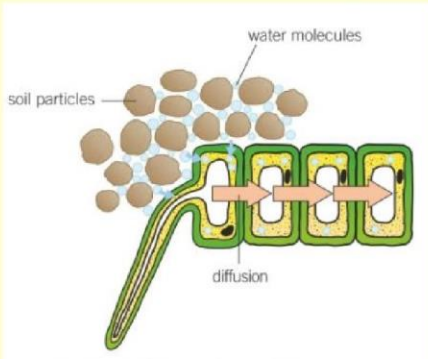


▲ A plant cell.

Section 2: Specialised Cells	
Specialised Cell	**How structure relates to function**
8 Sperm cell	**Streamlined** head and long tail. Contains lots of **mitochondria** to transfer energy.
9 Nerve cell	**Long** and thin. **Transmits electrical impulses** over a distance.
10 Red blood cell	Contains **haemoglobin** to transport oxygen. Disc-like shape to **increase surface area**.
11 Root hair cell	Long extension to **increase surface area** for water uptake by osmosis; **thin cell wall**.
12 Leaf cell	Found at the top of the leaf and are packed with **chloroplasts** to maximise **photosynthesis.**



Parts of a microscope

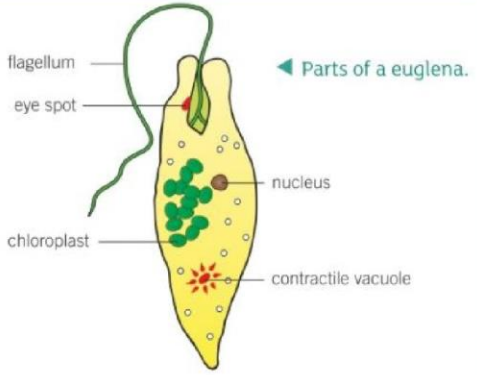


▲ The diffusion of water is known as osmosis.

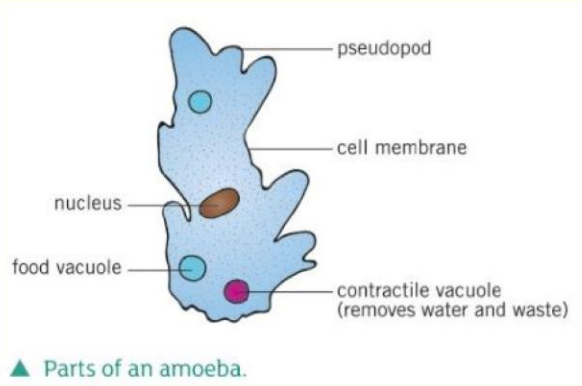
Section 4: Microscopy	
13 Magnification	The degree by which an object is **enlarged**. **Magnification = size of image / size of real object**
14 Microscope	An instrument used to magnify objects.

Section 5: Diffusion	
15 Diffusion	The movement of particles from an area of **high concentration** to an area of **low concentration.**
16 Concentration	A measure of the **number of particles** of a substance in a **fixed volume.**

Section 6: Unicellular organisms	
17 Unicellular	An organism made of just **one cell.**
18 Amoeba	A **unicellular organisms** found in water that feeds on other organisms.
19 Euglena	A **unicellular organism** found in water that has **chloroplasts** for **photosynthesis.**
20 Flagellum	Tail-like structure that spins like a propeller.
21 Binary Fission	Method of **reproduction** for amoeba and euglena. One cell splits into **two identical cells.**



◀ Parts of a euglena.



▲ Parts of an amoeba.

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