

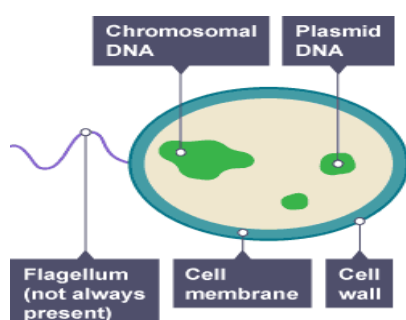
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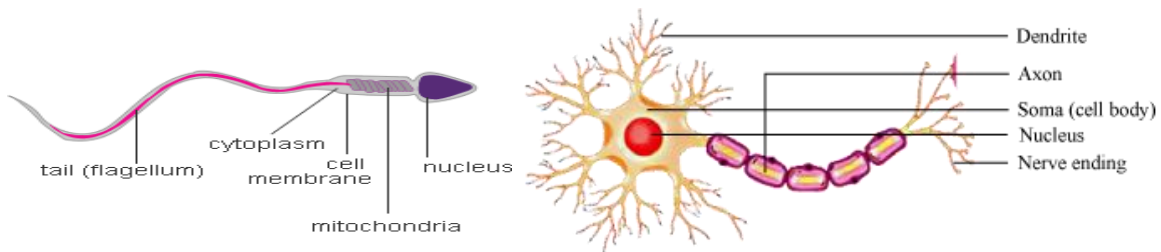
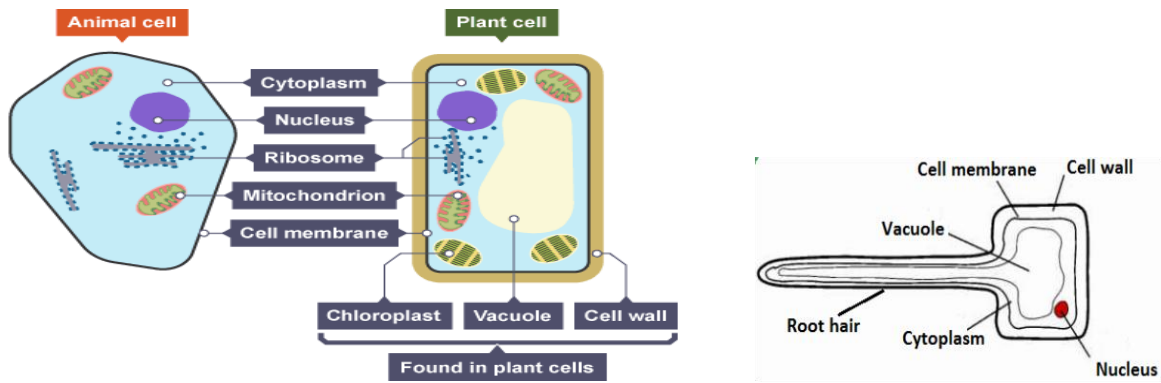
Cells

Booklet

LESSON CONTENT		😊	😐	😞
1	Animal & plant cells			
2	Primitive cells			
3	Specialised cells			
4	Microscopy			
5	Required Practical Making and observing slides			
6	Calculating Magnification			
7	Chromosomes			
8	Mitosis			
9	Stem cells			
10	Diffusion			
11	Exchange in organisms			
12	Osmosis			
13	Osmosis in organisms			
14	REQUIRED PRACTICAL: Osmosis prac set up			
15	REQUIRED PRACTICAL: Osmosis results & TASK			
16	Active transport			

Bacterial Cell





Section 1- Cell Structure		Eukaryotic Cells		Prokaryotic Cells
Structure	Function	Animal Cells	Plant Cells	Bacterial Cells
1. Nucleus	Contains the genetic information that controls the functions of the cell.	Y	Y	
2. Cell Membrane	Controls what enters & leaves the cell.	Y	Y	Y
3 Cytoplasm	Where many cell activities & reactions happen.	Y	Y	Y
4 Mitochondria	Provides energy from aerobic respiration .	Y	Y	
5 Ribosomes	Make proteins- site of protein synthesis .	Y	Y	Y
6 Chloroplast	Where photosynthesis occurs.		Y	
7 Vacuole	Use to store water & other chemicals as cell sap .		Y	
8 Cell Wall	Strengthens & supports the cell (made of cellulose in plants)		Y	Y
9 DNA Loop	A loop of DNA NOT in a nucleus.			Y
10 Plasmid	A small circle of DNA , may contain genes associated with antibiotic resistance.			Y

Section 3- Microscopy

17 Magnification	Tells you how many times bigger a microscope makes an object. Magnification = length of magnified object ÷ length of actual object
18 Resolution	The ability of a microscope to distinguish between 2 separate points.
19 Light Microscope	A basic microscope, using light. Can magnify objects ×1500
20 Electron Microscope	A microscope which uses electrons, to magnify images more than a light microscope. Gives greater detail. Can magnify objects ×2,000,000

Section 2- Specialised Cells

Specialised Cell	How structure relates to function
11 Sperm Cell	Acrosome contains enzyme to break into egg, tail to swim. Many mitochondria to provide energy.
12 Nerve Cell	Long to transmit electrical impulses across a distance.
13 Muscle Cell	Contain protein fibres that contract when energy is available, making the cells shorter.
14 Root Hair Cell	Long extension to provide a large surface area for water & mineral absorption- thin cell wall.
15 Xylem Cell	Waterproofed cell wall, cells are hollow to allow water through.
16 Phloem Cell	Some cell shave a lot of mitochondria to give energy for active transport. Some cells have little cytoplasm for sugars to move through easily.

Section 4- Orders of Magnitude

Unit Prefix	Size in Metres	
Centimetre (cm)	0.01m	100 cm= 1m
Millimetre (mm)	0.001m	1000 mm= 1m
Micrometre (µm)	0.000001m	1000000 µm = 1m
Nanometre (nm)	0.000000001m	1000000000 nm = 1m