

2.1 - Living Organisms	
Living Organisms	Living things that are made of cells and carry out the seven life processes .
Seven Life Processes	Movement, Reproduction, Sensitivity, Nutrition, Excretion, Respiration, Growth. (MRS NERG)
Unicellular	Living organisms made from only one cell .
Multicellular	Living organisms made from many cells .
2.2 - Parts of the cell found in both plant and animal cells.	
Nucleus	Controls the cell's activities. Contains genetic information (DNA) .
Cell Membrane	Controls what enters and leaves the cell.
Cytoplasm	Jelly-like fluid where chemical reactions occur.
Mitochondria	Where respiration occurs which releases energy for the cell.
2.3 - Parts of the cell found in only plant cells.	
Cell Wall	Supports and strengthens the cell.
Chloroplasts	Where photosynthesis occurs which makes food for the plant. Contains a green chemical called chlorophyll which absorbs light .
Vacuole	Contains cell sap .
2.4 - Specialised Cells	
Sperm Cell	Fertilise egg cells. Carry male DNA . Tail to help it swim . Many mitochondria . Enzymes in head. Half a set of DNA .
Egg Cell	Contains female DNA . Cytoplasm contains nutrients . Cell membrane only allows one sperm in. Half a set of DNA .
Red Blood Cell	Carry oxygen . No nucleus . Large surface area .
White Blood Cell	Fight infections caused by micro-organisms .
Cilia Cell	Tiny hairs to sweep mucus (containing bacteria) out of the airways .
Nerve Cell	Carry electrical signals . Long and branched at the ends.
Root Hair Cell	Absorbs water and minerals from the soil. Root hair projections provide a large surface area . No chloroplasts .
Palisade Cell	Found in leaves . Contains many chloroplasts for photosynthesis .

2.5 - Body Organisation	
Cell	Basic building block of life.
Tissue	Group of similar cells working together.
Organ	Different tissues working together.
Organ System	Different organs working together.
Organism	Different organ systems working together.
2.6 - Respiration	
Respiration	Chemical reaction that occurs in all living organisms.
	Releases energy for movement, growth and warmth .
Aerobic Respiration	Requires oxygen
	glucose + oxygen -> carbon dioxide + water (+ energy)
Anaerobic Respiration	Does not require oxygen – happens in muscle cells during exercise .
	glucose -> lactic acid (+ energy)
	Lactic acid causes muscle cramps .
2.7 - Photosynthesis	
Photosynthesis	Produces food (glucose) for plants. Occurs in chloroplasts .
	carbon dioxide + water $\xrightarrow{\text{light energy}}$ glucose + oxygen
Chlorophyll	Green chemical which absorbs light energy needed for photosynthesis .
2.8 - Diffusion	
Concentration	Number of particles in a given volume .
Diffusion	Movement of particles from an area of higher concentration to an area of lower concentration .
Factors increasing the rate of diffusion into / out of cells.	Large surface area .
	Short distance e.g. thin cell walls
	Steep concentration gradient i.e. large difference between the higher and lower concentration.

Y7 Science Cycle 1 - Sheet 2

Cells & Life Processes

