



Topic 1: Cell Biology

*Definitions in **bold** are for higher tier only*

*Definitions marked by '**' are for separate sciences only*

Active transport: The movement of substances from a more dilute solution to a more concentrated solution (against a concentration gradient) with the use of energy from respiration.

Adult stem cell: A type of stem cell that can form many types of cells.

Agar jelly: A substance placed in petri dishes which is used to culture microorganisms on.

Cell differentiation: The process where a cell becomes specialised to its function.

Cell membrane: A partially permeable barrier that surrounds the cell.

Cell wall: An outer layer made of cellulose that strengthens plant cells.

Chloroplast: An organelle which is the site of photosynthesis.

Chromosomes: DNA structures that are found in the nucleus which are made up of genes.

Concentration gradient: The difference in concentration between two areas.

Diffusion: The spreading out of the particles of any substance in solution, or particles of a gas, resulting in a net movement from an area of higher concentration to an area of lower concentration. †

Embryonic stem cell: A type of stem cell that can differentiate into most types of human cells.

Eukaryotic cell: A type of cell found in plants and animals that contains a nucleus.

Magnification: How much bigger an image appears compared to the original object.

Meristematic cells: A type of stem cell that can differentiate into any type of plant cell.

Mitochondria: An organelle which is the site of respiration.



Mitosis: A type of cell division which produces two genetically identical daughter cells from one parent cell.

Nucleus: An organelle found in most eukaryotic cells that contains the genetic material of the cell and controls the activities of the cell.

Organelle: A specialised structure found inside a cell.

Osmosis: The diffusion of water from a dilute solution to a concentrated solution through a partially permeable membrane.

Plasmid: Loops of DNA found in the cytoplasm of prokaryotic cells.

Prokaryotic cell: A type of cell found in bacteria that does not contain a nucleus.

Resolution: The ability to distinguish two different points in a specimen.

Specialised cells: Cells that are adapted to perform a specific function.

Stem cell: An undifferentiated cell that can divide to produce many specialised cells of the same type.

Surface area: The amount of contact an object has with its environment.

Surface area to volume ratio (SA:V): The size of the object compared with the amount of area where it contacts its environment.

The cell cycle: A series of stages preparing the cell for division.

Therapeutic cloning: Producing an embryo that has the same genes as a patient.

Vacuole: An organelle that stores cell sap.

Definitions denoted with a '+' taken from: [AQA GCSE Biology Specification, 8461, Version 1.0 2.1, April 2016](#)