

# Definitions and Concepts for WJEC (Wales) Biology GCSE

## Topic 2.2: Cell Division and Stem Cells

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

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

**Adult stem cell** - A stem cell found in certain parts of the body (bone marrow, skin, liver) that can differentiate into some types of cells.

**Allele** - A version of a gene (also known as variant).

**Cancer** - A result of changes in cells that lead to uncontrolled growth and division +

**Chromosome** - A long, coiled molecule of DNA that carries genetic information in the form of genes. Chromosomes are found in pairs in body cells.

**DNA (Deoxyribonucleic acid)** - A polymer which is made of two strands twisted around each other forming a double helix. It contains all the genetic information.

**Embryonic stem cell** - A type of stem cell found in very early embryos that can differentiate into any cell type.

**Gamete** - Sex cells (sperm and egg cells) with half the usual number of chromosomes. They are involved in reproduction.

**Gene** - A section of DNA that codes for a specific amino acid sequence which is polymerised to make a specific protein.

**Meiosis** - A form of cell division that produces gametes. Four gametes are produced; they are not genetically identical and contain half the number of chromosomes.

**Meristem tissue** - A plant tissue that contains many undifferentiated cells.

**Mitosis** - A type of cell division that produces two identical diploid daughter cells (i.e. contain a full set of chromosomes) from one parent cell. It is the second stage of the cell cycle and is important for growth, development and the replacement of damaged cells.

**Primary tumour** - A tumour formed due to uncontrolled mitosis.

**Protein** - A large molecule synthesised from amino acid monomers.

**Secondary tumour** - When the cells of the primary tumour spread to other tissues.



**Sex chromosomes** - A pair of chromosomes responsible for the determination of gender. XY in males, XX in females.

**Stem cell** - Cells that are unspecialised and capable of differentiating into a range of different cell types.

**Type 1 diabetes** - A condition in which the pancreas fails to produce insulin resulting in high blood sugar levels. Stem cells could be used to replace the damaged cells of the pancreas.

† Definition taken from: [WJEC \(Wales\) GCSE in BIOLOGY Specification V.2 January 2019](#)

