

Definitions and Concepts for WJEC (Wales) Biology GCSE

Topic 2.2: Cell Division and Stem Cells

*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.

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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](#)

