

Key points to learn

1. Cell cycle	Process by which body cells divide. Three stages: 1. Copy: Two copies of chromosomes and internal cell structures 2. Mitosis: Copies of chromosomes move and form two nuclei 3. Split: cytoplasm and cell membranes split to make two identical cells
2. Mitotic cell division	Makes two identical copies of cells. Used in growth and repair
3. Asexual reproduction	Form of reproduction using mitotic cell division to make clone cells
4. Chromosome	Contains large number of genes. Made of DNA molecules Human body cells contain 23 pairs of chromosomes
5. Genes	Instructions for a characteristic
6. DNA	Molecules that make genes
7. Cell differentiation	Stem cells can form different types of specialised cells Most animal stem cells differentiate early Many plant stem cells can differentiate at any time
8. Clone	Genetically identical copy of a cell or organism

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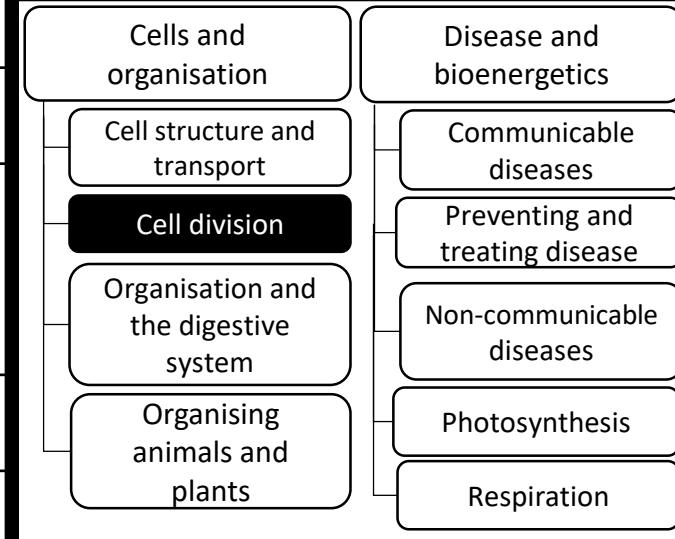
9. Stem cells	Not differentiated. Can become any type of cell that is needed
10. Human stem cells	1. From embryos can become most types of human cell 2. From adult bone marrow can form many cells like red blood cells May be able to help conditions like diabetes and paralysis Issues with use: • Potential spread of virus or immune response • Some people have ethical or religious objections
11. Meristem cells	Plant stem cells. Can become any type of plant cell at any time Used to clone: • rare plants from extinction • crops with desirable features
12. Specialised animal cells	1. Sperm – tail to swim 2. Nerve – carry electrical impulses 3. Muscle – contract and relax
13. Specialised plant cells	1. Root hair - absorb water and ions from soil 2. Xylem – carry water and minerals from roots 3. Phloem – carry glucose to cells
14. Ethical objections	Related to what a person thinks is morally good or ok

Trilogy B2: Cell Division

Part of: 4.1 Cell Biology

Knowledge Organiser

Big picture (Biology Paper 1)



Exam point

In order for an organism to grow cells need to copy themselves, this process is called mitosis. You must spell **mitosis** correctly in the exam.

Additional information

