Keywords

- **Acetyl coenzyme A**: A two-carbon molecule formed in oxidative decarboxylation when an acetyl group is bound by coenzyme A. It is oxidised in the Krebs cycle.
- **Adenosine triphosphate (ATP):** The universal energy carrier found in all living cells.
- **Aerobic respiration:** A form of cellular respiration that takes place in the presence of oxygen and produces carbon dioxide, water and ATP. Overall: $C_6H_{12}O_6 + 6O_2 \longrightarrow 6CO_2 + 6H_2O$
- **Alcoholic fermentation:** A type of fermentation that takes place in plant root cells and yeast cells and produces ethanol and carbon dioxide.
- **Anaerobic respiration:** A form of cellular respiration that takes place in the absence of oxygen. It produces less ATP than in aerobic respiration.
- **ATP synthase:** An enzyme found embedded in cellular membranes that phosphorylates ADP to form ATP as protons flow through it.
- **Artificial twinning:** The artificial production of monozygotic twins from the manual splitting of the early embryo.
- **Aseptic techniques:** A range of techniques used to culture microorganisms under sterile conditions in order to minimise contamination.
- **Batch fermentation:** An industrial method of fermentation that runs for a set period of time. The culture broth is not removed until the fermentation is complete.
- **Bioremediation:** The use of microorganisms to remove soil and water pollution.
- **Biotechnology:** The field of biology involving the use of living systems to produce or transform materials. Applications include agriculture, medicine and food science.
- **Brewing:** The production of beer from the steeping of barley in water, and the fermentation of the resulting product with yeast.
- **Clones:** The genetically identical offspring produced because of cloning.
- **Cloning:** A method of producing genetically identical offspring by asexual reproduction.
- **Continuous fermentation:** An industrial method of fermentation in which culture broth is continuously removed and extra nutrient medium is added. The fermentation conditions remain relatively constant.
- **Culture:** The growth of living matter in vitro in suitable conditions.
- **Hardy-Weinberg principle:** A model that predicts that the ratio of dominant and recessive alleles in a population will remain constant between generations if the following five conditions are met: no new mutations; no natural selection; no migration; large population; and random mating. It provides a formula for calculating the frequencies of alleles: $p^2 + 2pq + q^2 = 1.0$ where p is the frequency of the dominant allele, and q is the frequency of the recessive allele.
- **Heterozygous:** When someone has two different alleles of a gene e.g. Ff. High-throughput sequencing: More recent, large-scale approaches to DNA sequencing that use a flow cell. They enable many clusters of DNA fragments to be sequenced simultaneously, giving efficient and rapid sequencing. This has allowed whole-genome sequencing.
- **Homeobox genes:** A group of regulatory genes that contain a homeobox, a DNA sequence that is highly conserved in animals, plants and fungi. Homeobox genes are responsible for the development of body plans in different organisms.
- **Homozygous:** When someone has two identical alleles of a gene e.g. ff. Hox gene: A type of homeobox gene that is present in animals only. The terms “Hox gene” and “homeobox gene” can be used interchangeably.

Year 13 – A level Biology

5.7 respiration	6.2. Genetic inheritance	6.4 cloning and biotech
Revision flashcards for respiration topic.	Revision flashcards for the inheritance topic.	Revision flashcards for the cloning and biotech topic.
YouTube video to help study the respiration topic	YouTube playlist to help study inheritance topic.	YouTube video to help study cloning and biotech.
Mind map to help break down the information for respiration	Mind map to help break down the information for Inheritance topic.	Mind map to help break down the information for cloning and biotech topic.

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