

POST-16 EVOLUTION

Glossary of key words

Adaptation	Physical and behavioural changes which allow an organism to survive in its environment.
Alfred Russel Wallace	An English naturalist, explorer, geographer, anthropologist and biologist who independently conceived the theory of evolution through natural selection at the same time as Charles Darwin. He also identified what is now called the Wallace Line, which separates species of Asian origin from those of Australasia. (8 January 1823 – 7 November 1913)
Alleles	Different forms of the same gene. Can be dominant or recessive.
Charles Darwin	An English naturalist, geologist and biologist who proposed the theory of Natural Selection. (12 February 1809 – 19 April 1882)
DNA	Deoxyribonucleic Acid. DNA strands carry the genes that control what an organism looks like or how it behaves.
Evolution	The process where living things change over time as a result of changes in their genome. This is as a result of mutations within the DNA and Natural Selection.
Genome	The complete set of an organism's genetic material.
Genotype	The composition of alleles in an individual.
Mutation	A permanent change to the structure of DNA.
Natural Selection	The process where organisms which are better suited to their environment are more likely to survive to produce offspring, meaning that each successive generation has a greater proportion of advantageous characteristics.

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Phenotype

The characteristics of an organism as a result of its genotype.

Selection

A particular phenotype is favoured and therefore more likely to reproduce. There are three types of selection: Directional, Disruptive and Stabilising.

Directional Selection favours phenotypes at one extreme of the range of variation.

Disruptive Selection favours phenotypes at both extremes of the range of variation.

Stabilising Selection favours phenotypes in the middle of the range of variation.

Speciation

The formation of new species due to genetic isolation of part of a population. There are two types: Allopatric and Sympatric.

Allopatric Speciation happens where geographic barriers lead to part of a population becoming isolated from the rest of the species. As they cannot reach the rest of the population, Natural Selection favours those most suited to their side of the geographical barrier which may lead to a new species arising.

Sympatric Speciation is the result of a mutation or behaviour which causes part of the population to no longer breed with the rest of the species. Due to the two populations no longer breeding together, they may evolve differently until they become different species.

Species

A group of living organisms that are capable of interbreeding to produce a fertile offspring. This definition is the most widely used, but is not universal and other definitions do exist.

