

Definitions and Concepts for OCR (B) Biology GCSE

Topic 6: Life on Earth – Past, Present and Future

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

Definitions marked by '*' are for separate sciences only

Allele - A version of a gene (also known as variant). Each chromosome in a pair carries the same genes, but may have different alleles.

Antibiotic - A type of medication that helps cure bacterial disease by killing infective bacteria inside the body.

Antibiotic resistance - The ability of a bacteria to become resistant to the treatment that is being used to kill it, i.e. antibiotics. This provides evidence for evolution.

***Asexual reproduction** - A form of reproduction that only involves a single parent and creates genetically identical offspring.

Biodiversity - The combination of the diversity of living organisms, the diversity of genes these organisms have, and the diversity of ecosystems. †

Classification - The organisation of organisms into groups based on their characteristics and structure.

Community - All of the populations of different species that are living in a habitat together.

Competition - When different organisms compete for the same resources (e.g. food, shelter and mates) in an ecosystem. It limits population size.

Ecosystem - The community of living (biotic) and non-living (abiotic) components of an area and their interactions.

Eutrophication - When an aquatic ecosystem (e.g. river) becomes enriched with nutrients, stimulating excessive algae growth.

Evolution - A change in the inherited characteristics of a population over time, through the process of natural selection, which may result in the formation of new species. †

Extinction - The death of all members of a species.

Fertilisation - The fusion of male and female gametes to restore the full chromosome number.

Fossil fuel - The burning of fossils for energy, which releases carbon dioxide into the air.

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Fossil record - The remains or impressions of dead organisms found in rocks that are millions of years old. They provide evidence for evolution.

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.

***Genetic modification** - The alteration of the genetic information of an organism.

Genetic variation - The variation in the genes of a species.

Genome - The entire genetic material of an organism.

Genotype - The combination of alleles an organism has for each gene. †

Kyoto protocol - An international treaty that aims to reduce pollution and manage climate change.

Mutation - A random change in DNA which increases genetic variation. They may have a neutral, beneficial or damaging effect on phenotype.

Natural selection - The process by which advantageous alleles are passed down to offspring over many generations, increasing the allele frequency. These alleles give rise to phenotypes best suited to the environment.

Phenotype - The physical characteristics of an organism. It is due to interactions between the genotype and the environment.

Selective breeding - A process in which desired organisms are bred to produce offspring with desirable characteristics.

***Sexual reproduction** - A form of reproduction that involves the fusion of male and female gametes. This method of reproduction produces genetic variation.

Speciation - The formation of new species due to the evolution of two reproductively separated populations. This is usually due to geographic isolation.

Species - A group of organisms that can interbreed and produce fertile offspring.

***Sustainability** - The ability to maintain something for future generations.

Taxonomy - The classification of organisms.

Zygote - The fertilised egg cell produced when the nuclei of the male and female gametes fuse in sexual reproduction.

† Definition taken from: [OCR Gateway Science Biology \(B\) Specification \(J257\) V3.1 \(January 2020\)](#)

