

Definitions and Concepts for OCR (A) Biology GCSE

Topic 4: Community Level Systems

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

Definitions marked by '' are for separate sciences only*

Abiotic factors - The non-living factors of an ecosystem, e.g. temperature, light intensity, moisture, wind direction, wind intensity, soil pH, soil mineral content, carbon dioxide levels and oxygen levels.

***Aerobic decomposition** - Organisms break down dead or decaying matter (decompose) in the presence of sufficient oxygen.

***Anaerobic decomposition** - Organisms carry out decomposition in the absence of oxygen producing carbon dioxide and methane gas. This usually happens in waterlogged soils.

***Biomass** - The mass of all the living material present in a particular area or particular organism.

Biotic factors - The living factors of an ecosystem, e.g. food availability, pathogens, predators and other species.

Carbon cycle - The cycle through which carbon (in the form of carbon dioxide) moves between the environment and living organisms. It involves respiration, photosynthesis, combustion and decomposition.

Combustion - The process by which organic matter is burnt to release energy as well as carbon dioxide and water. It is part of the carbon cycle.

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.

Compost - Dead or decaying matter that is often used as fertiliser for crops.

Decomposer - An organism that feeds on dead and decaying matter.

Decomposition - The process of breaking down dead material into simple organic matter. The decomposition rate is influenced by water availability, oxygen availability and temperature.

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

***Efficiency of biomass** - The efficiency of biomass transfer between trophic levels is calculated using:

$$= (\text{Biomass available after transfer} / \text{Biomass available before transfer}) \times 100$$

***Egestion** - The removal of undigested food from the body as faeces.

***Excretion** - The removal of metabolic waste from the body.

***Food chain** - Shows the feeding relationships between organisms and the resultant biomass transfer. It follows the structure of:

producer → *primary consumer* → *secondary consumer* → *tertiary consumer*

Habitat - The place where plants, animals and all other living organisms live. A habitat includes all biotic and abiotic factors.

Host - The organism on/in which the parasite lives.

Interdependence - The dependence of organisms on each other in order to survive, e.g. herbivores rely on plants, birds rely on trees for shelter.

Microorganisms - Very small organisms that are involved in the recycling of materials in an ecosystem. They are able to convert carbon into carbon dioxide which is then released into the atmosphere. They also return mineral ions to the soil.

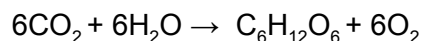
Mutualism - The interaction between two organisms where both benefit as a result of their relationship.

Parasite - An organism which feeds on or in a host organism at the expense of the host.

Parasitism - The interaction between two organisms where only one organism, the parasite, benefits whilst the host does not.

Pathogen - A bacteria, virus or any other microorganism that can cause disease.

Photosynthesis - An endothermic reaction that takes place in the chloroplasts, converting carbon dioxide and water into glucose and oxygen using light energy. It is a two stage process.



Sunlight energy

Precipitation - A part of the water cycle where water returns to land in the form of rain, snow or hail.



Predation - A biological relationship in which a member of one species consumes a member of another species.

Predator - A consumer that preys on and eats other animals.

Prey - A consumer that is eaten by a predator.

***Primary consumer** - An organism that cannot produce its own food, so must obtain energy by feeding on the producer. They are herbivores which consume at trophic level two of the food chain.

***Producer** - An organism that makes its own food, usually via photosynthesis.

***Pyramid of biomass** - A table showing the dry mass of living material at each trophic level in a food chain. This table forms the shape of a pyramid.

***Respiration** - The process by which energy is released from glucose molecules. This can be done aerobically (in sufficient oxygen) or anaerobically (in an oxygen debt). It is part of the carbon cycle and releases carbon dioxide into the air.

***Secondary consumer** - An organism that cannot produce its own food so must obtain energy by feeding on the primary consumer. They are carnivores which consume at trophic level three of the food chain.

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

***Tertiary consumer** - A carnivore that eats other carnivores.

***Trophic level** - The position of an organism in the food chain.

Water cycle - The cycle of water moving between the environment and living organisms. It involves precipitation, condensation, transpiration, biomass transfer and evaporation.

