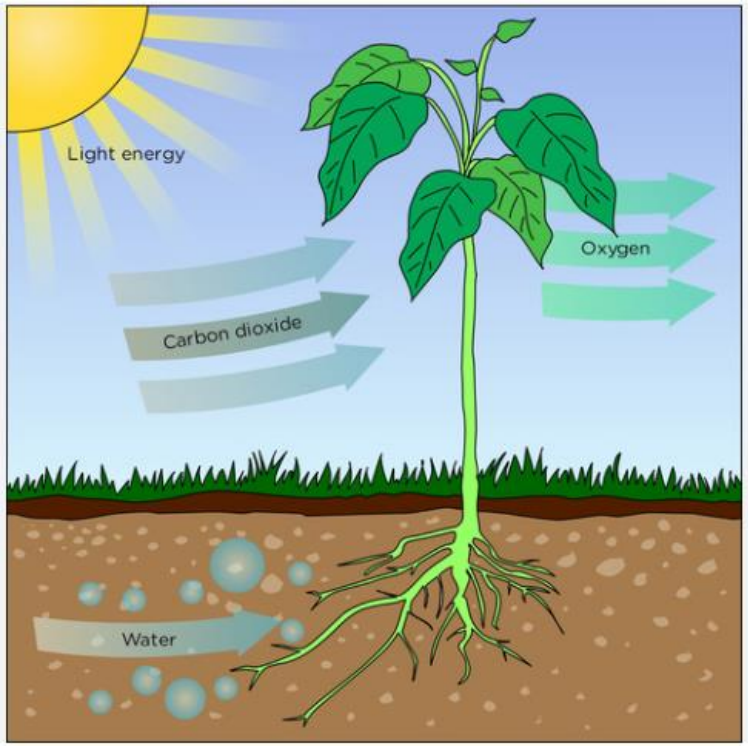
What are the feeding relationships between living organisms?

Radiation from the sun is the source of energy for living organisms.

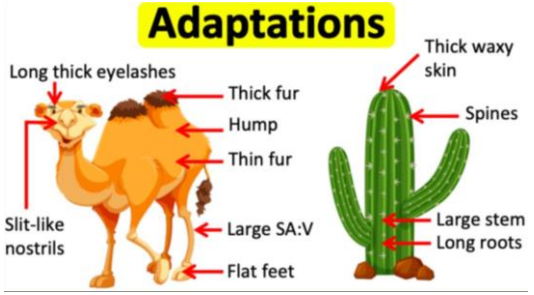
Green plants and algae absorb a small amount of the light that reaches them and make glucose by photosynthesis. These organisms are called producers.



The photosynthesis equation is

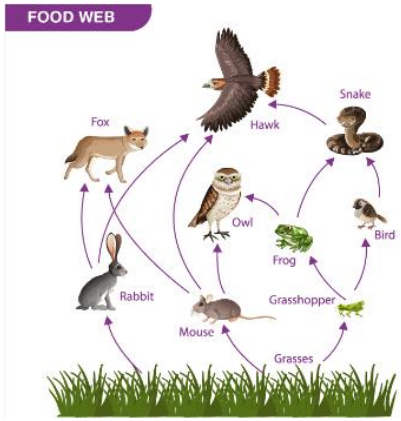
Carbon dioxide + water → glucose + oxygen

Animals and plants may be adapted for survival in the conditions where they normally live.



Feeding relationships within a community can be represented by a food chain. All food chains begin with a producer.

A food web can be used to understand the interdependence of species within an ecosystem in terms of food resources.



All materials in the living world are recycled to provide the building blocks for future organisms.

Decay of dead plants and animals by microorganisms returns carbon to the atmosphere as carbon dioxide to be used by plants in photosynthesis.

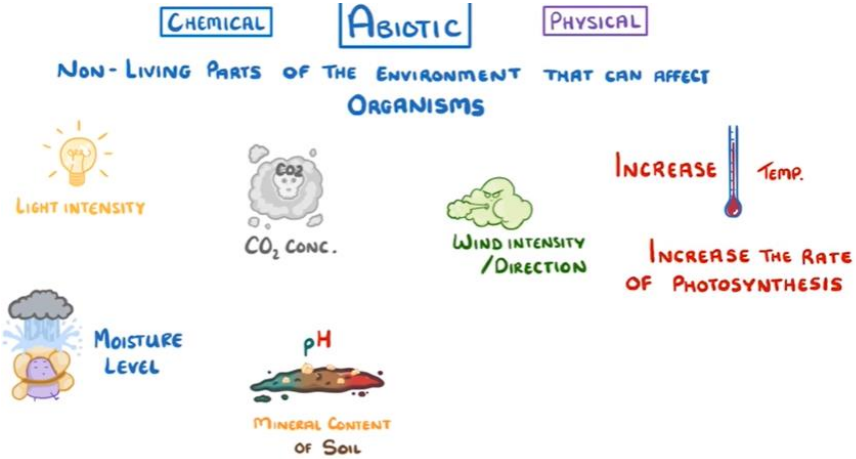
AQA Entry Level Certificate Component 2: Biology: Environment, evolution and inheritance

What determines where particular species live?

Plants often compete with each other for light and space, and for water and nutrients from the soil.

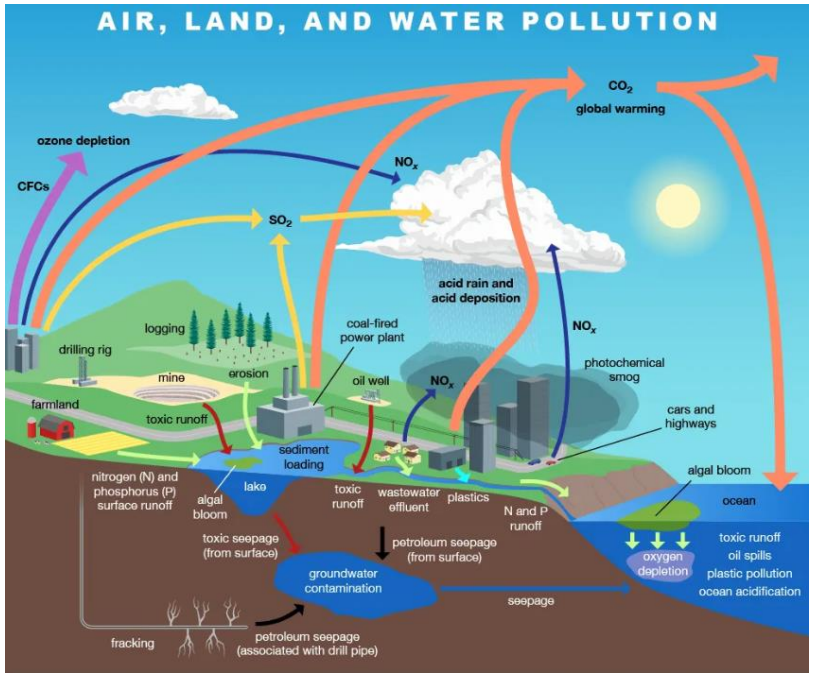
Animals often compete with each other for food, mates and territory.

Animals and plants are subjected to environmental changes. Such changes may be caused by non-living or living factors.



Pollution of the environment can occur:

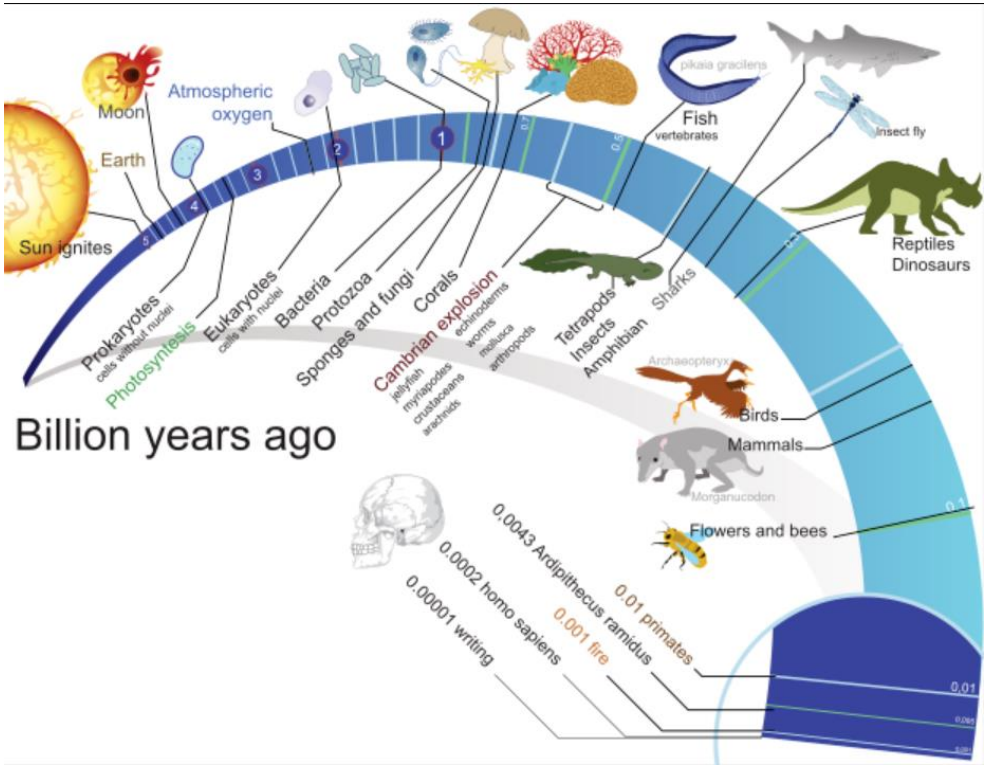
- in water, from sewage, fertiliser or toxic chemicals
- in air, from smoke and gases such as sulfur dioxide which contributes to acid rain
- on land, from landfill and from toxic chemicals such as pesticides and herbicides, which may be washed from land into water.



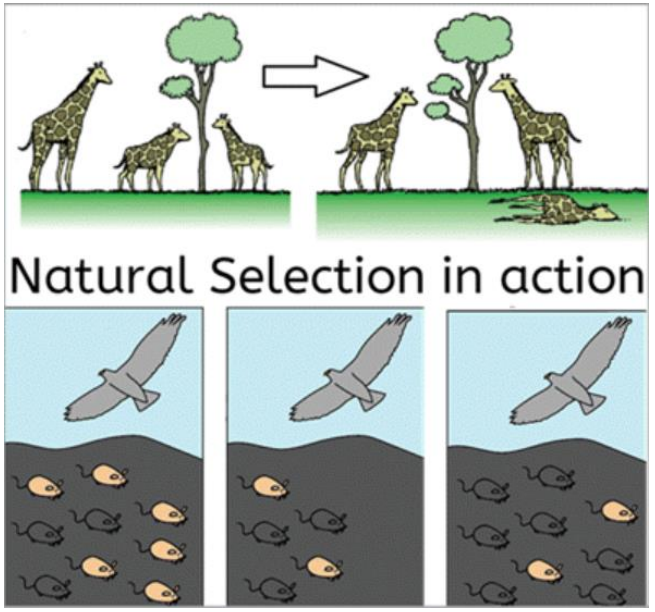
Rapid growth in human population means that more resources are used and more waste is produced.

How life has developed on Earth

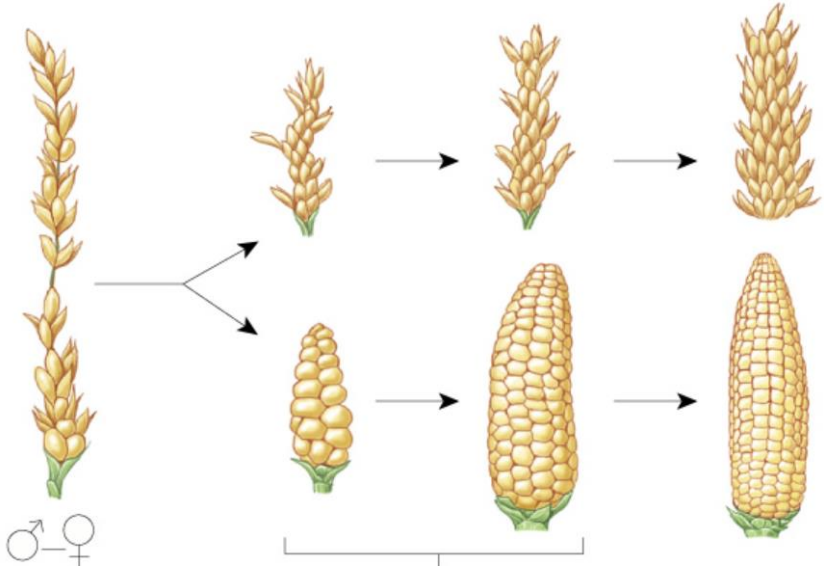
Darwin's theory of evolution states that all species of living things have evolved from simple life forms that first developed more than three billion years ago.



In natural selection, individuals with characteristics most suited to their environment are most likely to survive to breed successfully.



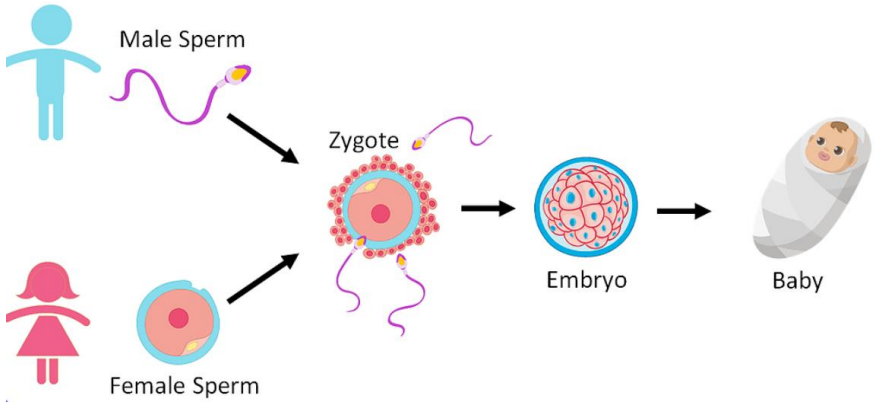
Artificial selection (selective breeding) is the process by which humans breed plants and animals for particular genetic traits



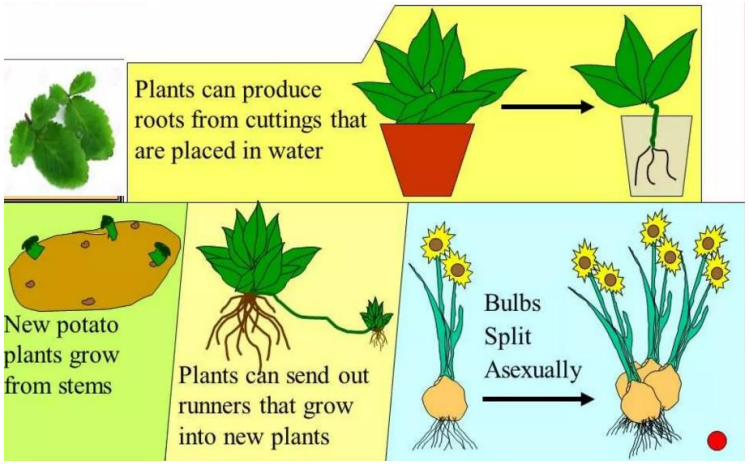
Reproduction

There are two types of reproduction:

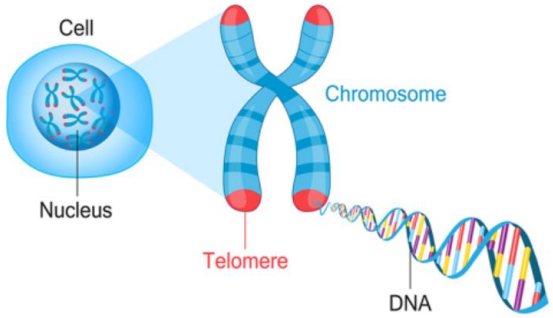
1. Sexual reproduction, which involves the joining of male and female sex cells. There is a mixing of genetic information, which leads to variety in the offspring.



2. Asexual reproduction, where only one individual is needed as a parent. There is no mixing of genetic information, which leads to identical offspring (clones).



The genetic material in the nucleus of a cell is made of a chemical called DNA, which is contained in structures called chromosomes. A cell consists of a nucleus that controls the actions of the cell, and cytoplasm



Chromosomes carry genes that control the characteristics of the body.

Humans have 23 pairs of chromosomes. Only one pair carries the genes that determine sex: females have the same sex chromosomes (XX); in males the chromosomes are different (XY).

In genetic engineering, genes from chromosomes of humans and other organisms can be 'cut out' and transferred to the cells of other organisms.