

Year 8 Knowledge Organiser - Evolution

Charles Darwin developed the theory of evolution after his voyage around the world. He published '**On the origin of species**' in **1859**.

Key words:

Population: Group of organisms of the same kind living in the same place.

Natural selection: Process by which species change over time in response to environmental changes and competition for resources.

Extinct: When no more individuals of a species remain.

Biodiversity: The variety of living things. It is measured as the differences between individuals of the same species, or the number of different species in an ecosystem.

Competition: When two or more living things struggle against each other to get the same resource.

Evolution: Theory that the animal and plant species living today descended from species that existed in the past.

Populations of organisms are affected by many factors.

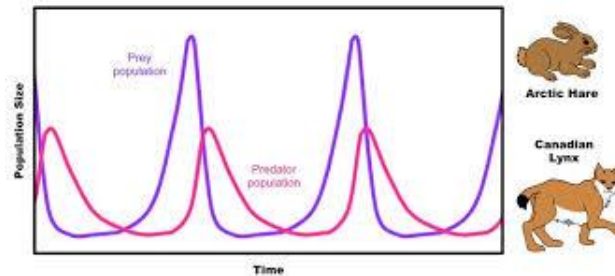
Competition between organisms for resources like **food** and **nesting sites** limits the size of populations.

Predators are animals that hunt other organisms for food.

The **prey** is the animal they hunt.

For example **ladybirds** hunt and eat **greenfly**.

The graph below shows how the numbers of predators and prey are linked.



If an organism is not **suited** to its environment, then it will become extinct.



The theory of **evolution** states that only the best suited individuals of a species will survive. This is called '**survival of the fittest**'. The others will die and not reproduce. The best suited individuals will **reproduce** and pass on their **genes** to their offspring. Over many **generations** and **millions of years** the whole species can change to suit the environment.

If the environment does not change, then the species will remain the same. Crocodiles look the same as they did 80 million years ago – they are very well adapted to their environment.

Classification of organisms means putting them into groups of similar organisms based on their characteristics. There are five kingdoms of living organisms: **animals, plants, fungi, bacteria** and **protocists**.

The main groups of vertebrates (animals with backbones) are:

Fish – have gills and scales

Amphibians – have moist skin to breathe through, lay eggs in water

Reptiles – have scaly skin, lay leathery eggs on land

Birds – have beaks and feathers, lay hard shelled eggs

Mammals – have fur and feed their babies on milk

Websites that might be useful:

<https://www.bbc.com/bitesize/guides/zw9jq6f/revision/1>

Extension ideas to research: Why did Darwin's book cause so much controversy when it was published? Are humans still evolving today?