

Evolution

Big picture

Evolution is the process in which animal and plant species change over long periods of time. Fossils provide evidence of evolution. The scientifically-accepted theory for how this happens is called natural selection.

All individuals in a species show variation. This can be caused by inherited characteristics from parents (like eye colour), by the environment we live in (like language or scars) or by both (like height or hair colour).

Adaptations

Animals and plants that are better adapted to their environment will survive. There are three types of adaptation:

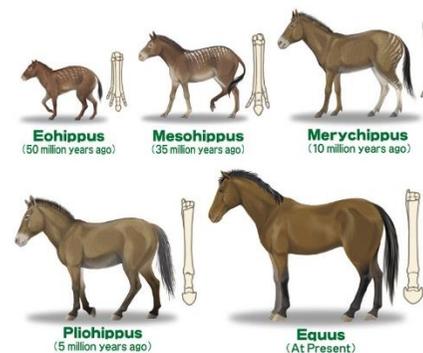
- **Behavioural** – this is how an animal acts or behaves
- **Structural** – these are physical characteristics that adapt an animal to its environment
- **Physiological** – these are internal functions and processes that allow animals to survive in different environments

Darwin's theory of evolution by natural selection

There is variation in individuals in a population. → Those that are better suited to the environment are more likely to survive. → Those that survive are more likely to reproduce. → Those that reproduce can pass on the advantageous inherited characteristic to their offspring.

Vocabulary

- **adaptation (noun):** features that help organisms survive in its environment.
- **fossil (noun):** fossils are the preserved remains of living things that lived over 10,000 years ago.
- **inheritance (noun):** 'inheritance' is the process whereby the genetic material passes from the parents to the offspring (an animal's young). The genetic material determines your characteristics
- **palaeontology (noun):** the study of fossils and the evolution of life on Earth.
- **sexual reproduction (noun):** the production of new living organisms by combining genetic information from both individuals.
- **species (noun):** a group of organisms that can interbreed to produce fertile offspring (offspring that can go on to successfully reproduce).
- **variation (noun):** the differences between organisms within the same species.



Fossils provide evidence of evolution. Fossils show that the modern-day horse with a hoof evolved over millions of years from a small animal, the size of a dog with 4 toes.

