

Science • Evolution and Inheritance



Crucial Knowledge

- living things change over time and that this gradual change is called evolution.
- natural selection is the cause of this change; natural selection works as there is natural variation within a species
- there is also competition to survive and reproduce and that members of a species with advantageous characteristics survive and reproduce - these characteristics are passed down to their offspring
- members of a species with less advantageous characteristics do not survive and reproduce – these characteristics are not passed down to offspring
- offspring vary and are not identical to their parents
- fossils form when a plant or animal dies and is quickly covered with silt or mud so that it cannot be rotted by microbes or eaten by scavenging animals
- in time layers of sediment build, squashing the mud and turning it to stone around the dead plant or animal
- the materials in the body are replaced by minerals that flow in water through the rock, leaving a rock in the shape of the animal or plant that was once there
- fossils can help us learn about things that lived long ago
- the gradual change of species over millions of years can be observed by looking at examples of fossils.



Key Vocabulary

Evolution	is the process of change to animal and plant species over long periods of time.
Natural selection	is a process by which a species changes over time in response to changes in the environment
adapted	Special features that plants and animals develop to suit the place where they live.
environment	contains many habitats and includes areas where there are both living and none living things.
inheritance	when characteristics are passed on to offspring from their parents.
variation	The differences in characteristics between individuals of the same species.
species	all animals or plants that are the same kind.
fossils	The remains or imprint of a prehistoric plant or animal, embedded in rock and preserved.



Diagrams / Images

Adaptive Traits

Characteristics that are influenced by the **environment** the living things live in. These **adaptations** can develop as a result of many things, such as food and climate.



Inherited Traits

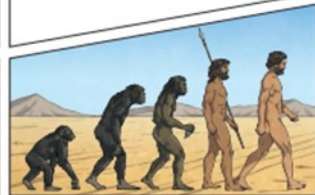
Eye colour is an example of an **inherited trait**, but so are things like hair colour, the shape of your earlobes and whether or not you can smell certain flowers.

Living Things	Habitat	Adaptive Traits
polar bear	arctic	Its white fur enables it to camouflage in the snow.
camel	desert	It has wide feet to make it easier to walk in the sand.
cactus	desert	It stores water in its stem.
toucan	rainforest	Its narrow tongue allows it to eat small fruit and insects.

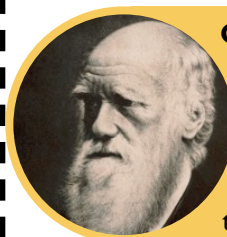
Fossils are the preserved remains, or partial remains, of ancient animals and plants. **Fossils** let scientists know how plants and animals used to look millions of years ago. This is proof that living things have **evolved** over time.



Evolution is the gradual process by which different kinds of living organism have developed from earlier forms over millions of years. Scientists have proof that living things are continuously **evolving** - even today!



Important People



Charles Darwin (1809-1882)

English scientist who studied nature. He is best known for his theory of evolution by natural selection, which was a major development in the history of science.

Gregor Mendel (1822-1884)

A botanist whose experiments with pea plants established principles of heredity and laid the mathematical foundations of genet-



We Are Building Our Knowledge From

- Living Things and Their Habitats (Y4)