



Year 6 – Evolution and Inheritance

Humans, animals, plants, insects and even bacteria, all **descend** from the first living things that ever came to be.

There are over 340 **breeds** of dog, yet they all come from one kind of wild wolf that existed many years ago.



ROCKET WORDS

– learn these words and their definitions

Key Word	Definition
adapt	to become adjusted to new conditions
ancestor	a living thing from the past from which a modern one has evolved
characteristic	The features or qualities that a living thing has
descendant	a living thing that is related to a particular plant or animals that lived long ago (descend = verb)
evolve	the process by which the inherited characteristics of living things can gradually change
inherit	This is when characteristics are passed on to offspring from their parents.
mutations	random changes between parent and offspring
natural selection	the process where living things that are better adapted to their environment tend to survive and produce more offspring
variations	the differences between individuals within a species
species	a group of living things with very similar characteristics. They breed together to make more living things of the same type

Adaptations

Some living things have special **characteristics** that make it easier for them to survive.

For example, a polar bear lives in a very cold **habitat** so it has thick fur to keep warm.



On the other hand, an African Bush Elephant lives in a very warm **habitat** and has large ears that it flaps to keep cool.

Plants are also **adapted** to their **environment**. For instance, the spines of a cactus are much better than flat leaves at preventing water loss and they protect the plants from animals that may want to eat them.



The animals and plants in one habitat are suited to live there and may not be able to survive in other **habitats**. When a **habitat** changes, the animals and plants that live there are affected.

Inheritance and Variation

Organisms are not identical to each other, even if they are from the same family. The differences between us all are called **variations**. Some **characteristics**, like eye colour and skin colour, are passed from parents to their **offspring**. These are called **inherited characteristics**. Other **characteristics**, like accent or hairstyle, are not **inherited** – they come from your environment.

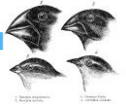


What is the evidence for evolution?



When **palaeontologists** compare living things in **fossils** to living things today, they can see similarities and differences between them.

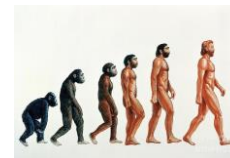
Organisms also provide evidence of **natural selection** and **evolution**. For example, on the Galapagos Islands, Charles Darwin found differences between finches from island to island. Their beaks had evolved to make them better **adapted** to eat the food on each island.



Evolution

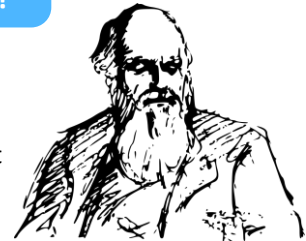
Everything in the natural world is competition. Some living things are better adapted than others. For instance, they may be faster so they can hunt prey or escape predators, or they may be more attractive so they can more easily attract a mate. Those living things that are better at surviving, are more likely to **reproduce** and pass on their **characteristics** to their **offspring**. This is known as **natural selection**.

This means that over time (usually millions of years), **organisms** gradually change and may eventually become a new species. This process is called **evolution**.



Who was Charles Darwin?

Charles Darwin is famous for publishing the first theory of **evolution**, along with Alfred Wallace, in 1858. He then went onto explain his ideas in his famous book *On the Origin of the Species*, the following year.



Mary Anning was a British palaeontologist, who discovered lots of fossils that contributed to our understanding of evolution.