



# 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.



## Vital Vocabulary

Key Word	Definition
<b>adapt</b>	to become adjusted to new conditions
<b>ancestor</b>	a living thing from the past from which a modern one has evolved
<b>characteristic</b>	the features or qualities that a living thing has
<b>generation</b>	the average span of years that an organism lives
<b>evolution</b>	the change in the inherited characteristics of an organism over many generations
<b>inherit</b>	This is when characteristics are passed on to offspring from their parents.
<b>mutations</b>	random changes between parent and offspring
<b>natural selection</b>	the survival and reproduction of the fittest (best adapted)
<b>variations</b>	the differences between individuals within a species
<b>species</b>	a group of living things with very similar characteristics that can 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 **environment** so it has thick fur to keep warm.



On the other hand, an African Bush Elephant lives in a very warm **environment** 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.



When **environmental** changes occur, animals and plants in a particular **habitat** may no longer be able to survive and/or reproduce.

## 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

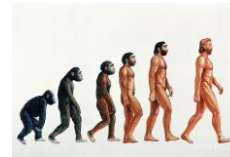


Darwin found differences between finches from island to island. Their beaks had evolved from the beak of a common **ancestor** to make them better **adapted** to eat the food on each island.

## Evolution

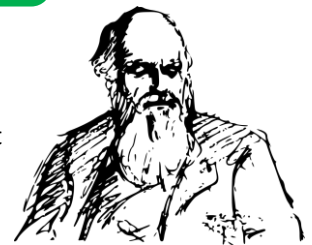
Everything in the natural world is competition. Some living things are better adapted than others. For instance, they may be faster so they can hunt prey or escape predators, or they may be more attractive so they can more easily attract a mate. Those living things that are better at surviving, are more 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.