

Evolution & Inheritance



Natural Selection



We can tell by looking at fossils that species change over time.

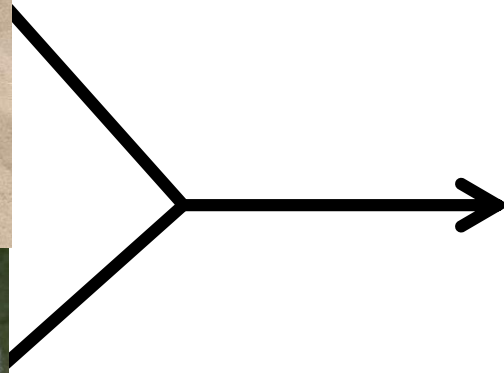
We call this evolution and we can see that, over millions of years, many new species evolve from older species.



But how does this happen?



We know that animals inherit their characteristics from their parents.



We also know that traits are sometimes random, allowing people to have a completely different characteristic to their parents.

We are just missing one piece of knowledge that tells us why evolution happens. Do you know what it is?



To fully explain why evolution happens we need to consider what Charles Darwin called natural selection.

In the wild there is a constant struggle for survival. Those that are suited to the environment will prosper, and those that are unsuited will die out.

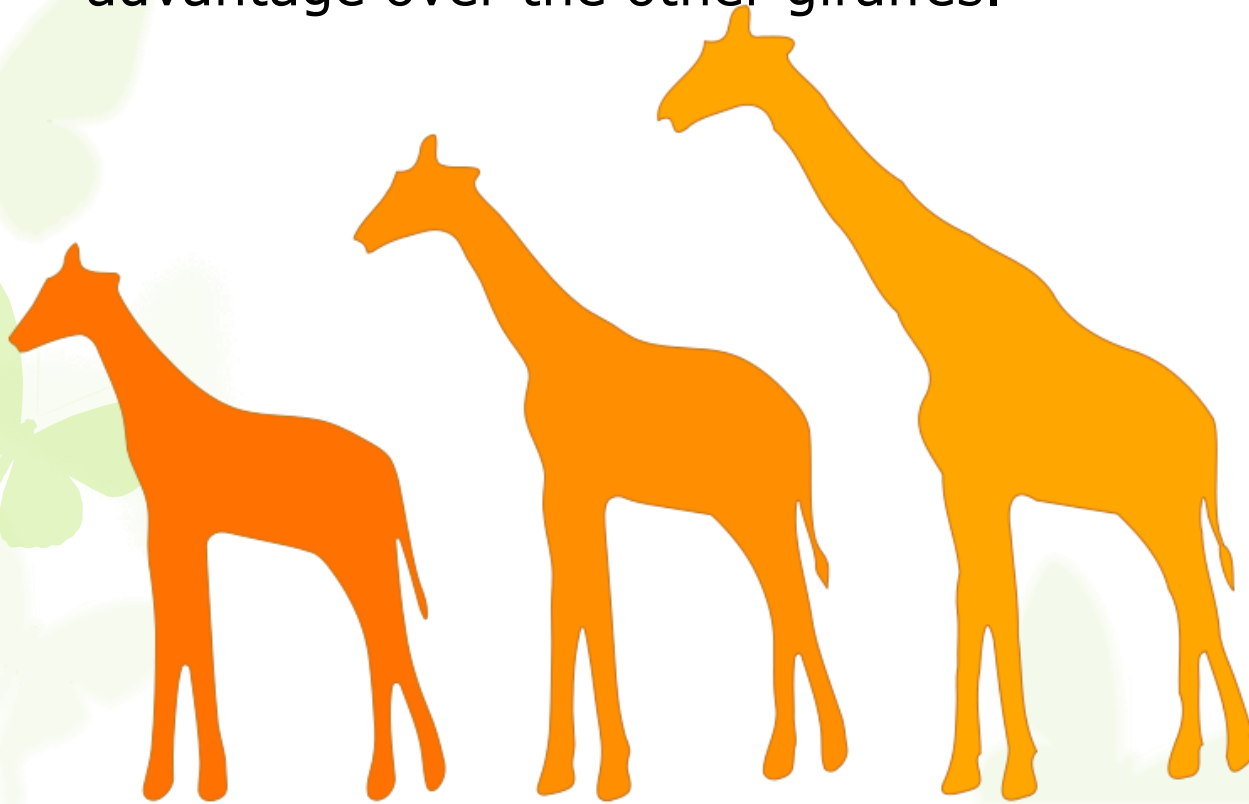
This is also known as survival of the fittest.



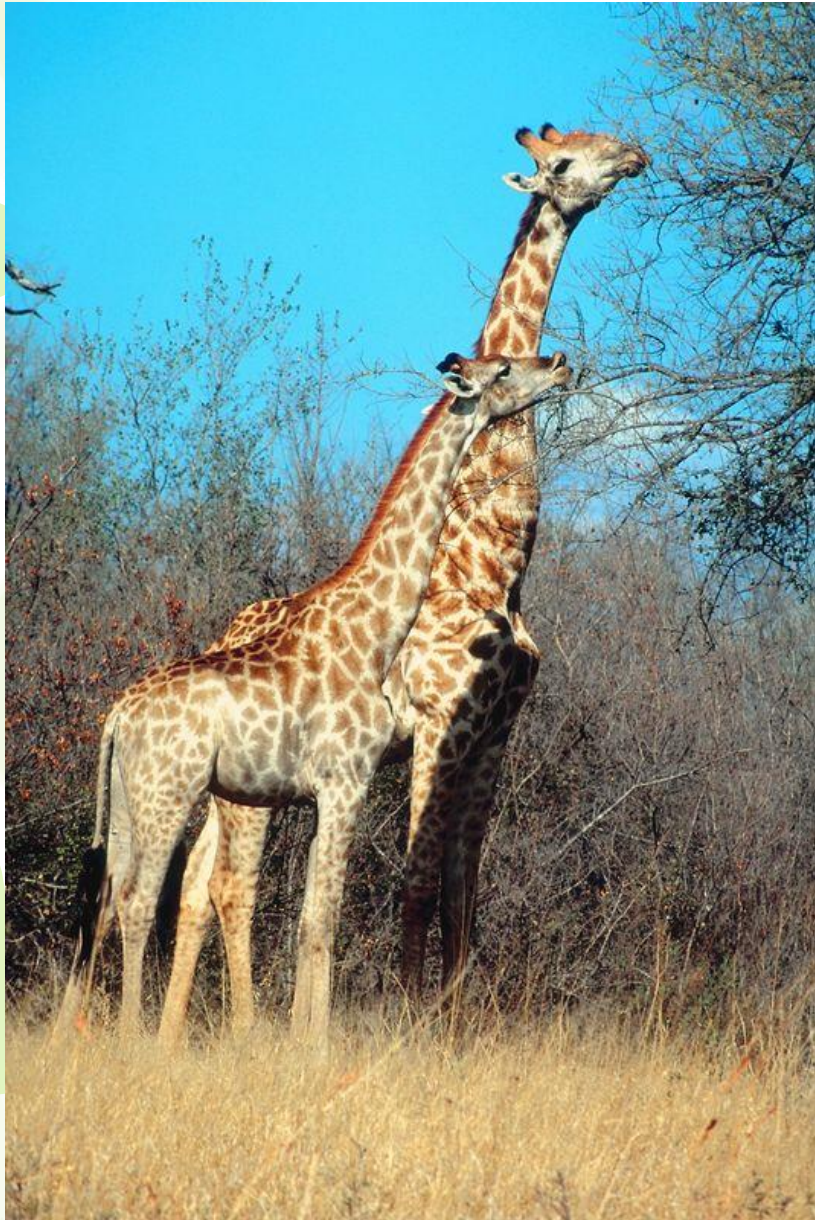
A good example is the evolution of the giraffe.

Ancient giraffes would have been more similar to a horse, without a long neck.

The giraffes that were born (by chance) with slightly longer necks meant they were able to reach and eat the leaves growing from higher branches. This gave them an advantage over the other giraffes.



[BBC clip:
Why does the
giraffe have a
long neck?](#)



The giraffes with the advantage were able to have more children, who inherited the slightly longer neck.

Some of their offspring might even have had an even longer neck, giving them an even greater advantage in the wild.

The changes are only small, but over millions of years giraffes eventually ended up having the long necks we see today.

Evolution can be driven by anything that gives an increased likelihood to reproduce.

Most flowers depend on pollination by bees to reproduce. Bright colours attract the bees' attention, so the large brightly coloured flowers are more likely to reproduce.

The duller flowers don't attract as many bees and fail to reproduce.

Eventually, only the brightest and most attractive flowers are left.



Task – Use information from the powerpoint to answer the first part of the task.

Image by Loke Seng Hon



What is natural selection?

What causes natural selection?

What happens after millions of years of natural selection?

Research using laptops

- Where do peacocks live?
- Why do you think peacocks have such flamboyant feathers?
- Does it give them an advantage in the wild?
- Or could it be useful in attracting a mate?

Challenge

What feature of their environment might have influenced the development of this feature?