

Testing the Theory

triple
crossed

Have you met Charles Darwin?



Charles Darwin

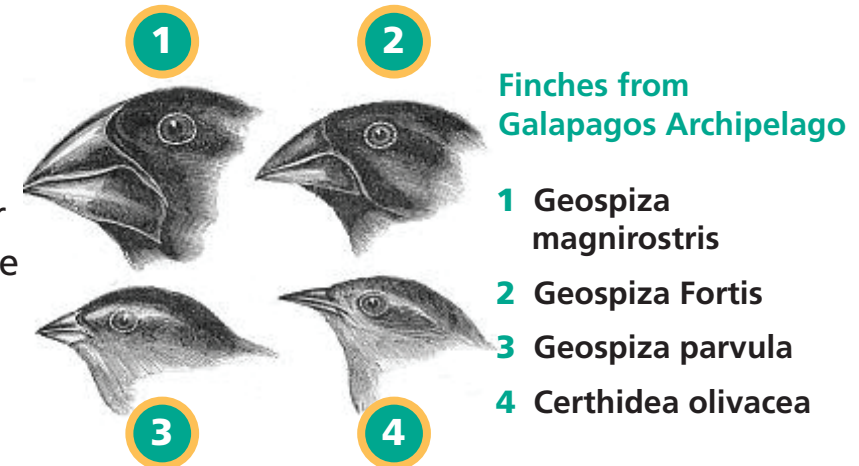
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Charles Darwin was an English naturalist who studied plants and animals in the 19th century. He came up with a theory that all living species have changed and developed over time, this is known as evolution.



While working on the Galapagos islands Darwin noticed that small birds called finches varied from island to island. While they were all definitely part of the finch family there was wide variation in their size, beaks and claws. Using this, and other evidence collected over more than 30 years, Darwin came up with the theory of evolution by natural selection. This was a very important and controversial theory that upset a lot of people at the time – and still does today.



Individuals within a species can have wide **variations**. For example, a rabbit can be brown or white or grey or black.

Inherited **variations**, like these, are caused by differences in the genes and can be passed on when the individual reproduces.

Differences in the environment can also cause **variation**, for example, a rabbit that gets more food may grow more. Variations caused by the environment are not passed on during reproduction.

Individuals with the best suited characteristics are **more** likely to survive and reproduce, passing on their genes to the next generation.

Those with **less** well suited characteristics are less likely to survive and pass on their genes through reproduction.

The Theory of Evolution

triple
crossed



Can you use the **Theory of Evolution** by **Natural Selection** to explain the characteristics of these animals?

Look at the pictures and read the text. Now try to answer the questions below

Case Study 1: The Giant Anteater

The giant Anteater can be found in Central and South America. It feeds mainly on ants and termites, sometimes up to 30,000 insects in a single day.

Case Study 2: The Giraffe

The giraffe is related to deer and cattle and eats twigs from trees, grass and fruit. It has one of the shortest sleep requirements of any mammal, which is between ten minutes and two hours in a 24-hour period.

Case Study 3: The Polar Bear

The Polar Bear is related to the brown bear but lives in the Arctic Circle and is the world's largest carnivorous species found on land.

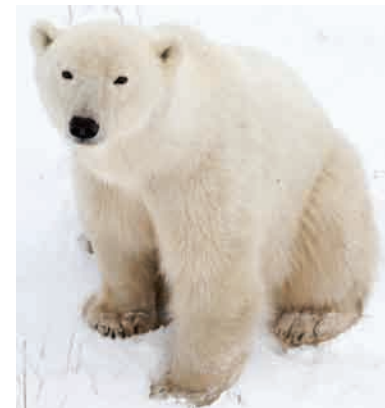
Q Can you use **Darwin's Theory of Evolution** to explain the shape of the anteater's snout?



Q Can you use **Darwin's Theory of Evolution** to explain the giraffe's long neck?



Q Can you use **Darwin's Theory of Evolution** to explain the colour of the polar bear?



Human Evolution

triple
crossed

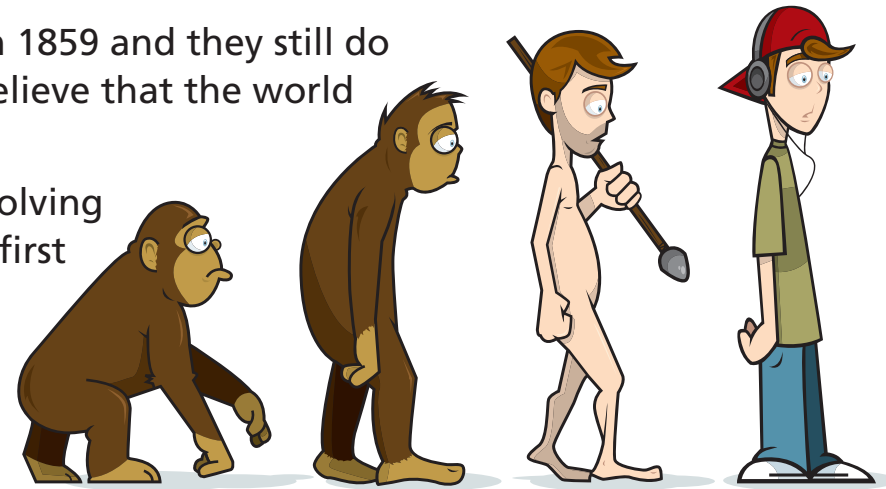


According to **Darwin's Theory of Evolution**, humans have also evolved over millions of years from apes into what we know today as homo-sapiens.

Darwin's ideas caused a lot of controversy when they were published in 1859 and they still do today. Some religions believe that Darwin's theories are false as they believe that the world was created by God. This religious idea is known as creationism.

If humans did evolve from apes do you think that means we are still evolving to adapt to our changing environment? If the answer to this is yes, we first need to think about how our environment might change.

What do you think life will be like in the future? Answer the questions below.



Q What do you think we will eat in the future?

Q Where do you think we will live in the future?

Q What do you think the weather will be like in the future?

Human Evolution

triple
crossed

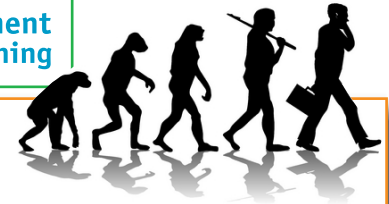


So now you've thought about what our environment will be like in the future, let's think what we might look like.

Use the space to draw what you think humans will look like in the future. Use your answers from the previous page and make sure your human is adapted to the environment you have described.



Smart Grid



Thumbs Up

We were **great** at the task because ...



We can say how variation between individuals is caused, for example...

Thumbs Sideways

We were **good** at the task because ...



We can explain how variation can lead to changes in a species. An example of this is...

We came up with creative suggestions about how the environment for humans might change in the future, e.g.

Thumbs Down

We were **okay** at the task because ...



We thought about some ways in which the human species might evolve. Some changes might be...

Next time we will...