

Charles Darwin

Charles Robert Darwin was a famous naturalist (an expert in studying nature), geologist and biologist. He was best known for his pioneering work on the theory of evolution by natural selection.

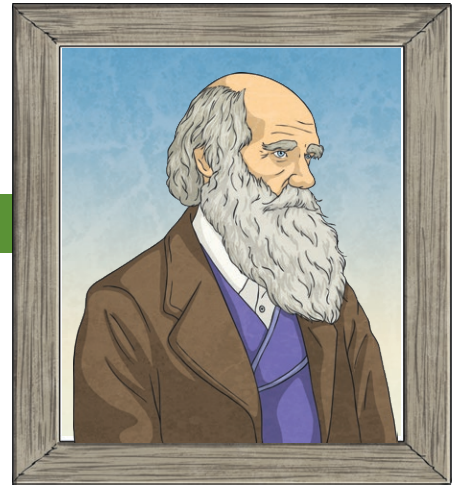
Early Life and Education

Charles was born on the 12th of February 1809 in Shrewsbury, Shropshire into a wealthy family. His father was a well-known doctor and his mother was the daughter of a famous pottery producer. Both of Charles's grandfathers had been important thinkers in a movement called the Enlightenment: the idea that people could think and reason for themselves without being told what to do by authority or religion.

Growing up, Charles was raised by his three elder sisters. He then went on to follow in his father's footsteps by embarking on a course to study medicine at the University of Edinburgh. Nevertheless, he soon realised that this was not the profession for him and he began to take interest in many of the new ideas that were popular at the time. He moved to Cambridge to train to be a clergyman and it was there that Charles began to dedicate time to his real passions: biology and natural history.

The Galápagos Islands and the Theory of Evolution

Charles's travels took him to the remote Galápagos Islands – a group of 19 islands and many smaller islets in the middle of the Pacific Ocean. There, he noticed species which were similar but with noticeable differences. For example, he noticed that the mockingbirds and finches on some of the islands in the Galápagos Islands were slightly different, even though they lived only a few miles apart. Darwin began to realise that these birds



HMS Beagle

In February 1832, Charles embarked on an exploratory world voyage on board the HMS Beagle as guest naturalist which lasted for almost five years. On board, he was responsible for collecting and making notes about the animals, plants and geology of the countries that they visited.

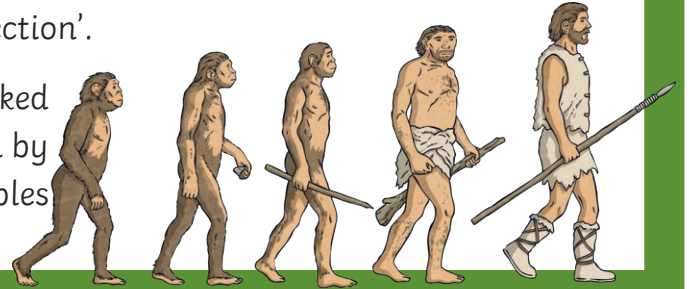
Charles explored a vast array of countries with a wide variety of exotic species and new habitats where he collected fossils and specimens along the way.



had all descended from the same species and, after spending time in isolation a long way from others, had begun to evolve (adapt and change over time) to suit their habitats.

This, he believed, was because those animals that were better suited to their surroundings lived for longer and reproduced more. Their offspring then carried the traits of the parents and the species would steadily change over a long period. He called this process 'evolution by natural selection'.

This voyage to the Galápagos Islands marked the beginning of Charles's theory of evolution by natural selection. He started to notice examples of natural selection throughout the world.



'On the Origin of Species'

The idea of evolution by natural selection caused a moral dilemma for Charles: he was raised as a Christian and the creationist ideas of the church (the idea that God created everything) contradicted those of evolution. What is more, other naturalists believed that each species stayed as it was since coming into being. Charles decided that to be able to introduce his new ideas to the world, he needed more evidence and so he began his research.

In November 1859, Charles published 'On the Origin of Species by Natural Selection'. The publication was ground-breaking and probably caused Charles a great deal of anxiety because he knew that it would be controversial. Nevertheless, his book was an international bestseller. He later introduced the term 'survival of the fittest' as a replacement for 'natural selection' in the book.

In his later book, 'The Descent of Man', Charles suggested that humans may have evolved from another species over 6 million years ago. This claim was made without the fossil evidence, which has since been unearthed. Because of this, scientists generally agree that humans share a common ancestor with apes, such as chimpanzees and gorillas.



Charles's Legacy

Charles Darwin's theory of evolution was hugely influential and paved the way for a change in the way that scientists view the world. The discovery of DNA has provided scientific evidence for Charles's theory of evolution. Over 100 years have elapsed since Charles published his material and his theory is still being widely discussed today.

Questions

1. What job did Charles Darwin's father have? Tick one.

- ☐ author
☐ clergyman
☐ doctor
☐ sailor

2. Draw **four** lines and complete each sentence.

When visiting the
Galápagos Islands,...

After leaving Edinburgh,...

In his book 'The Descent
of Man',...

Following the discovery
of DNA,...

Charles's theory of evolution has
been scientifically proven.

Charles suggested that humans
may have evolved from a species
over 6 million years ago.

Charles moved to Cambridge to
train to be a clergyman.

Charles noticed species which
were similar but with noticeable
differences.

3. List **two** of Charles Darwin's publications.

- _____
- _____

4. Look at the section called **On the Origin of Species**.

Find and copy a word which shows that Charles's theory of evolution did not agree with the ideas of the Christian church.

5. What term did Charles later introduce as a replacement for 'natural selection'?

6. Which famous discovery helped prove Charles's theory of evolution?

7. **Charles decided that to be able to introduce his new ideas to the world, he needed more evidence and so began his research.**

Discuss why you think Charles felt he needed to do this.

8. Explain how you think Charles may have felt before embarking on the voyage on board HMS Beagle.

9. Discuss why you think Charles Darwin may have thought that humans evolved from another species.

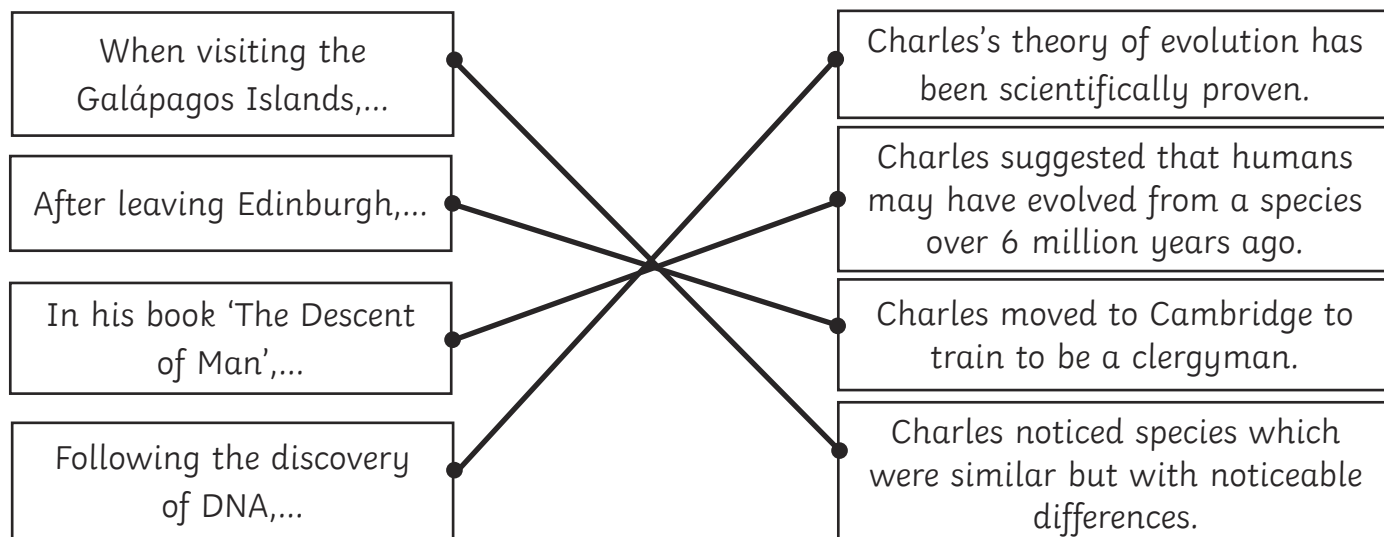
10. Summarise what you have learnt about Charles Darwin's theory of evolution using 30 words or fewer.

Answers

1. What job did Charles Darwin's father have? Tick one.

- ☐ author
- ☐ clergyman
- ☒ **doctor**
- ☐ sailor

2. Draw **four** lines and complete each sentence.



3. List **two** of Charles Darwin's publications.

- **On the Origin of Species (by Natural Selection)**
- **The Descent of Man**

4. Look at the section called **On the Origin of Species**.

Find and copy a word which shows that Charles's theory of evolution did not agree with the ideas of the Christian church.

contradicted

5. What term did Charles later introduce as a replacement for 'natural selection'?

survival of the fittest

6. Which famous discovery helped prove Charles's theory of evolution?

The discovery of DNA has helped to prove Charles's theory of evolution.

7. **Charles decided that to be able to introduce his new ideas to the world, he needed more evidence and so began his research.**

Discuss why you think Charles felt he needed to do this.

Pupils' own responses, such as: Charles knew that his new ideas would be controversial because they contradicted the ideas of the church. He would have wanted people to believe his theory and understand his ideas.

8. Explain how you think Charles may have felt before embarking on the voyage aboard HMS Beagle.

Pupils' own responses, such as: Before embarking on the voyage, Charles may have felt apprehensive as he may not have known what to expect. He may also have felt excited about what he might discover and honoured to have been invited.

9. Discuss why you think Charles Darwin may have thought that humans evolved from another species.

Pupils' own responses, such as: Charles may have thought that humans evolved from another species because he had identified many other species that had evolved by natural selection. He may also have seen similarities between humans and other mammals, such as apes.

10. Summarise what you have learnt about Charles Darwin's theory of evolution using 30 words or fewer.

Pupils' own responses, such as: The theory of evolution was created by Charles Darwin. He discovered that species adapted and changed over time to suit their surroundings. Scientists have proven this theory to be correct.