

## Charles Darwin & The Theory of Evolution

Charles Darwin was a British naturalist born in 1809.

He is famous for his work “**On the Origin of Species**”. In this book, he outlines his theory of **evolution and natural selection**. Darwin changed the way people viewed themselves through these two ideas.

According to Darwin, the millions of species present today evolved slowly over billions of years from a **common ancestor**. He called this process **natural selection**.

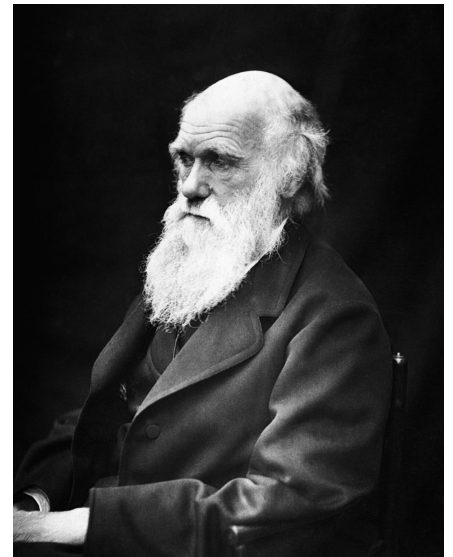
**Natural selection** emphasises that individuals that best adapted to their habitat passed these traits onto their offspring. Over a period of time, these individuals **evolved** into a species that was different from its ancestors. An example of this is reptiles transforming into birds. Another example is apes transforming into humans.

The traits which are heritable (able to be inherited) traits are controlled by **genes**. **Genotype** is the complete set of genes in an organism’s genome (all of their inherited ‘information’ = genes and DNA).

The traits that are a part of the organism’s structure and behaviour are called **phenotype** and evolve from the interaction between genotype and its environment. An example of this is an organism’s suntan arising due to the interaction between sunlight and the organism genotype. This is the reason why you cannot pass a suntan onto the next generation.

In natural selection, **nature** is the measure against which individual traits survive. “Nature” refers to the ecosystem in which various organisms interact physically and biologically in their local environment.

There is **competition** for the limited resources available between organisms. So it’s ‘**survival of the fittest**’, which is Darwin’s famous phrase.



Charles Darwin & the Theory of Evolution Questions

1. What **two** big ideas is Darwin known for?

a.

b.

2. Explain the process of natural selection: \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

3. What term controls heritable traits? \_\_\_\_\_

4. What term describes traits that evolve from the organism interacting with its environment (cannot be passed on)? \_\_\_\_\_

5. Describe the term "nature". \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

6. In your own words, describe with the phrase 'survival of the fittest' means.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

7. Draw an image of the evolution process occurring through natural selection. Show the progression of evolution for the species you have chosen. You can choose one of the examples mentioned in the reading or think of your own.

Name: \_\_\_\_\_

Science 7  
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**Darwin Matching**

Genotype                      all species evolved from a common ancestor

Speed of evolution                      complete set of genes in a genome

Pheneotype                      'survival of the fittest'

Competition                      evolve from interaction of environment and organism

Natural selection                      slowly over billions of years