

# Evolution & Inheritance



## UKS2 Science: Evolution & Inheritance

### Scientific Concepts

<b>Change</b>	To make someone or something different by a process or to replace something.
<b>Environment</b>	The circumstances, objects, or conditions by which one is surrounded
<b>Core Vocabulary</b>	
<b>Adaptation</b>	A trait (or characteristic) changing to increase a living thing's chances of surviving and reproducing.
<b>Variation</b>	Differences in characteristics between individuals of the same species is called variation.
<b>Inheritance</b>	When living things reproduce, they pass on characteristics to their offspring.
<b>Evolution</b>	Adaptation over a very long time.

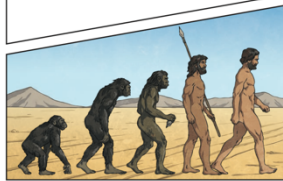
### Images/diagrams

#### Adaptive Traits

Characteristics that are influenced by the environment the living things live in. These adaptations can develop as a result of many things, such as food and climate.



Evolution is the gradual process by which different kinds of living organism have developed from earlier forms over millions of years. Scientists have proof that living things are continuously evolving - even today!



#### Natural Selection

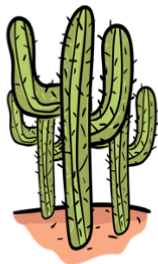
Fossils of giraffes from millions of years ago show that they used to have shorter necks. They have gradually evolved through natural selection to have longer necks so that they can reach the top leaves on taller trees.

#### Adaptation

Adaptation is when a plant or animal has changed in some way, over a long period of time, to be better suited to the environment in which it lives.

Camels have long eyelashes to protect their eyes from the sand.

They also have large, wide, flat feet to help them walk on the sand without sinking.



Cacti grow in the desert which is hot and sandy.

- They have spines instead of leaves to protect them from being eaten by predators.
- They have a thick, waxy skin which helps reduce the amount of water they lose.
- They have shallow, widespread roots which allow fast absorption of water when it rains.
- They have large, thick stems which allow them to store water until they need it.

#### Inheritance

When parents have offspring, they pass on their physical traits. The offspring inherit their parents' qualities. This means that most offspring look like their parents but they are not identical. The offspring may take characteristics from the father, the mother or a mixture of both.

##### Traits you can inherit

eye/hair/skin colour,  
shape of nose,  
size of feet,  
height

##### Traits you can't inherit

a good singing voice,  
ability to play football,  
drawing skills

Fossils are the preserved remains, or partial remains, of ancient animals and plants. Fossils let scientists know how plants and animals used to look millions of years ago. This is proof that living things have evolved over time.



#### Overview

**Marie Anning (1799-1847)** was a fossil collector, dealer and paleontologist.

She found many fossils in the fossil beds along the seacliffs near her home at Lyme Regis in the county of Dorset, on the south coast of the United Kingdom.

She always took her dog, Tray, with her when finding fossils. Amongst her findings were the first full ichthyosaur skeleton and the first two plesiosaur skeletons ever found.

As a working class woman, Anning was not always given the credit that she deserved for her discoveries by the rich gentlemen who dominated her field of study.

However, her work played an important role in improving understanding of biology and paleontology in the 19<sup>th</sup> Century.

A painting of Mary Anning from around 1842.



### Key Knowledge

1	Evolution is the gradual process by which different kinds of living organism have developed from earlier forms over millions of years. Scientists have proof that living things are continuously evolving - even today!
2	Fossils are the preserved remains, or partial remains, of ancient animals and plants. Fossils let scientists know how plants and animals used to look millions of years ago. This is proof that living things have evolved over time
3	Natural Selection is the process where organisms that are better adapted to their environment tend to survive and produce more offspring.
4	Adaptive selection are the genetic features that help a living thing to survive.
5	Fossils of giraffes from millions of years ago show that they used to have shorter necks. They have gradually evolved through natural selection to have longer necks so that they can reach the top leaves on taller trees.
6	Eye colour is an example of an inherited trait, but so are things like hair colour, the shape of your earlobes and whether or not you can smell certain flowers.