Waterbeach Community Primary School

Curriculum Capture for Year 6 Science: Evolution and Inheritance

Key Knowledge

Who were the key scientists who contributed to our understanding of evolution?

Mary Anning
A fossil collector and self-taught **paleontologist**, Anning's fossil discoveries were some of the most significant finds of all time: they showed that in earlier times, the Earth was inhabited by creatures very different from those living today. This proved that creatures changed/evolved over time and provided evidence that species that could not adapt to their environment became **extinct**. They allowed scientists to trace changes in species through time and in relation to changing environments.

Charles Darwin
A **naturalist** and collector, Darwin's close observations of animal life led to his ideas of **evolution** and **natural selection**: that living things adapt and change over time to suit their environment. His book 'The Origin of Species' was the first publication of these ideas and dramatically changed our understanding of the planet and all living things.

Alfred Wallace
Entymologist (studies insects), Alfred Wallace independently came up with a theory, very similar to Darwin's, to explain how species change. He described it to Darwin in a letter and they published a scientific paper together. Although Darwin and Wallace co-discovered natural selection, he is less well remembered than Darwin, possibly because of Darwin's book. Some people believe that Wallace is as important a figure in the history of science as Darwin.

Inheritance: Why are offspring similar but not identical to their parents?

A **characteristic** is a feature or trait of a living thing. Some characteristics are **inherited** genetically; some are as a result of the environment they live in .
Humans do not look identical but share certain common characteristics. Siblings may look more similar because of characteristics inherited from their parents (eg. eye colour, hair type, ear lobes). Other characteristics come from our environment and the way we live (such as where we live and the food we eat or exercise we take).
Environmental factors can impact on all living things eg the colour of hydrangeas, depends on the types of soil; the colour of some species of animal is dependent on where they live.

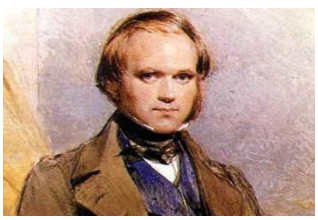
How do living things adapt to suit their environments?

Sometimes living things need to change or modify (**adapt)** their characteristics in order to survive in their environment. An organism's ability to survive is dependent on the process of **natural selection:** the plants and animals that have features and characteristics that best suit its environment are more likely to survive and reproduce. These adaptations are then genetically passed on to their offspring.

What is the difference between adaptation and evolution?

It is possible for adapted characteristics to change back (over time) if the environment changes. **Evolution** is permanent change over a very long period of time. Scientists have proof that living things are continuously evolving, even now!


Mary Anning 1799-1847


Charles Darwin 1809-1882


Alfred Wallace 1823-1913

Scientific Vocabulary

adaptation	the changing of a characteristic to increase a living thing's chances of surviving and reproducing
characteristics	features, traits or qualities particular to a species
evolution	the gradual process of change (over millions of years) of living things from their earlier forms
fossil	the remains or imprint of a pre-historic plant or animal preserved in rock
inheritance	when characteristics are passed from a parent (plant or animal) to their offspring
natural selection	the process by which organisms most suited to their environment tend to survive and reproduce
offspring	the young animal or plant produced by reproduction of that species
palaeontologist	a scientist who studies extinct animals and plants from their fossilised remains
variations	the differences between individuals within a species