

Year 6: Evolution and Adaptation

LIFE ON EARTH:

All life on Earth began from a single point around 4.5 billion years ago.



All living things have changed over time and this gradual change that takes thousands, if not millions of years, is called evolution.

Natural selection is the cause of this change.

Natural selection works as across a species there is natural variation within a species.

There is also competition to survive and reproduce.

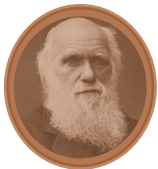
Members of a species with advantageous characteristics survive and reproduce.

These characteristics are passed down to their offspring.

Members of a species with less advantageous characteristics do not survive and reproduce.

These characteristics are not passed down to their offspring.

WHO:



Charles Darwin

1809 - 1882

Charles Darwin was an English scientist who studied nature. He is known for his theory of evolution by natural selection.

He was a Victorian explorer and travelled the world to develop his theories.



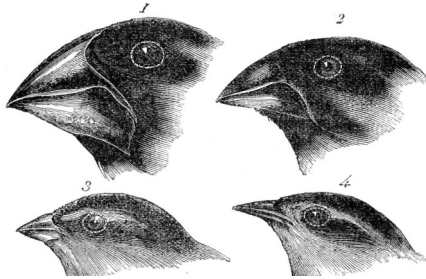
Alfred Wallace

1823 - 1913

Alfred Wallace was a scientist who studied animals and plants. He lived in England and travelled around the world.

Along with Charles Darwin, Alfred Wallace developed his theory of evolution through natural selection.

EVOLUTION OF SPECIES:



Charles Darwin discovered the Galapagos finches when he arrived in the Galapagos Islands on one of his voyages on his ship, The Beagle.

Darwin collected examples of these finches and realised that, while part of the same species, they had slightly different beaks, depending on the island they were found on.

When bad weather affected plant growth and there were fewer seeds to eat, the offspring of the Galapagos Finch had to eat larger seeds that would not normally be part of their diet in order to survive.

Only the offspring with large beaks could break open and eat all the larger seeds. Therefore, these offspring survived and the other, smaller-beaked offspring died.

The Galapagos finches with large beaks reproduced and had offspring. More of these offspring inherited large beaks and so Galapagos finch species started to evolve to have larger beaks.

The difference between the different islands means that the finches on the different island tended to become distinct.

Different populations also became specialised for different food sources. Birds with thin, sharp beaks eat insects and birds with large, sturdy beaks eat nut.

EVOLUTION IN FOSSILS:



The gradual change of species over millions of years can be observed by looking at examples of fossils.

KEY VOCABULARY:



ADAPTATION: a change in structure or function that improves the chance of survival for an animal or plant within a given environment.



ADVANTAGEOUS: involving favourable circumstances that increase the chances of success or effectiveness.



ANCESTOR: an early type of animal or plant from which a later, usually dissimilar, type has evolved.



ENVIRONMENT: all the circumstances, people, things, and events around them that influence their life.



EVOLUTION: a process of change that takes place over many generations during which species change some of their characteristics.



EXTINCT: no longer has any living members, either in the world or in a particular place.



FOSSIL: hard remains of a prehistoric animal or plant that are found inside a rock



GENERATION: the act or process of bringing into being



INHERIT: born with something because your parents or ancestors also have it.



NATURAL SELECTION: a process by which animals and plants adapt to their environment to survive and reproduce. Those less adapted die out.



PALAEONTOLOGY: the study of fossils as a guide to the history of life on Earth.



THEORY: a formal idea that is intended to explain something.



VARIATION: a change of slight difference.