

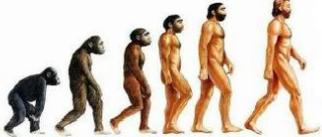


Key Concepts

Key Vocabulary

What is evolution?

- Evolution is a process of change that takes place over many generations, during which species of animals, plants, or insects slowly change some of their physical characteristics. This is because offspring are not identical to their parents.



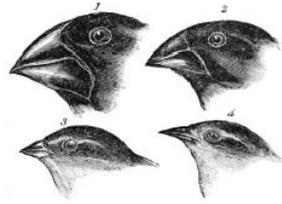
- It occurs when there is competition to survive. This is called natural selection.
- Difference within a species (for example between parents and offspring) can be caused by inheritance and mutations.
- Inheritance is when characteristics are passed on from generation to the next.
- Mutations in characteristics are not inherited from the parents and appear as new characteristics.

How do we know about evolution?

- Evidence of evolution comes from fossils - when these are compared to living creatures from today, palaeontologists can compare similarities and differences.
- Other evidence comes from living things - comparisons of some species may reveal common ancestors.

What is adaptation?

- Adaptation is when animals and plants have evolved so that they have adapted to survive in their environments.
- For example, polar bears have a thick layer of blubber under their fur to survive the cold, harsh environment of the Arctic while giraffes have long necks to reach the leaves on trees.



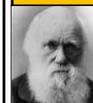
- Some environments provide challenges yet some animals and plants have adapted to survive there
- Sometimes adaptations can be disadvantageous. One example of this can be the dodo, which became extinct as it lost its ability to fly through evolution. Flying was unnecessary for the dodo as it had lived for so many years without predators, until its native island became inhabited.
- When adaptations are more harmful than helpful, these are called maladaptation.

adaptation	a change in structure or function that improves the chance of survival for an animal or plant within a given environment
ancestor	an early type of animal or plant from which a later, usually dissimilar, type has evolved
biodiversity	a wide variety of plant and animal species living in their natural environment
breeding	the process of producing plants or animals by reproduction
characteristics	the qualities or features that belong to them and make them recognisable
evolution	a process of change that takes place over many generations, during which species of animals, plants, or insects slowly change some of their physical characteristics
extinct	no longer has any living members, either in the world or in a particular place
Fossil	the hard remains of a prehistoric animal or plant that are found inside a rock
generation	the act or process of bringing into being; through reproduction, especially of offspring
inherit	If you inherit a characteristic you are born with it, because your parents or ancestors also had it.
maladaptation	the failure to adapt properly to a new situation or environment
mutation	characteristics that are not inherited from the parents or ancestors and appear as new characteristics.
Natural selection	a process by which species of animals and plants that are best adapted to their environment survive and reproduce, while those that are less well adapted die out

Working Scientifically Skills

	Using Scientific knowledge to ask questions.		Using and developing keys to identify and classify living things and materials
	Using scientific language to draw conclusions.		Recording data, taking repeat measurements where necessary and calculating a mean.
	Recognising when to use other sources to answer questions and separating opinion from fact.		

Famous Scientists



Charles Darwin (1809-1882) an evolutionary scientist, studied different animal and plant species, which allowed him to see how adaptations could come about. His work on the finches was some of his most famous.