



What should I already know?

- Parents produce offspring through reproduction.
- Mary Anning (21 May 1799 – 9 March 1847) was an English fossil collector, dealer, and palaeontologist who became known around the world for important finds she made in Jurassic marine fossil beds in the cliffs along the English Channel at Lyme Regis in the county of Dorset in Southwest England.
- How fossils are formed when things that have lived are trapped in rock.
- The Industrial Revolution took place in the 18th- 19th centuries

Adaptation

- Foxes are adapted to live in different environments. Some of the characteristics that have changed include their tail, ears, fur colour and fur length.
- The peppered moth adapted to change colour in the 19th century and changed back in the 20th century.
- Environments include tundra, alpine mountains, forests and desert.
- Cacti - stems that can store water; a widespread shallow root system so that can collect water from a large area; spines instead of leaves reducing water loss and protecting them from animals that might want to eat them!
- Camels - a double row of long eyelashes; nostrils which can close; store of fat in hump; long strong legs; thick leathery pads on flat, wide feet and on knees; thick fur to keep them warm during cold, desert nights.
- Adaptations can be positive, negative or neutral.

Human intervention

Selective breeding (or artificial selection) involves humans deliberately breeding living things to produce particular characteristics. This results in new varieties/breeds. Cross breeding is where two parents from the same species are bred in order to combine particular characteristics from each parent.

Values

Challenge	What challenges do particular characteristics help us to overcome?
Commit	How did Wallace and Darwin commit to their work?
Conquer	How do living things conquer the challenges of surviving?
Celebrate	How do we celebrate the work of pioneers?

Technical vocabulary

characteristic	The distinguishing features or qualities that are specific to the species.
inherited	This is when characteristics are passed on to offspring from their parents.
environmental	Relating to a living thing's surroundings.
variation	The differences between individuals within a species.
offspring	The young animal or plant that is produced by the reproduction of that species.
adaption	An adaption is a characteristic changing to increase a living thing's chances of surviving and reproducing.
habitat	A specific area of place in which particular animals or plants can live.
environment	An environment contains many habitats and includes areas where there are both living and non-living things.
evolution	Adaption over a very long time
natural selection	The process where organisms that are better adapted to their environment tend to survive and produce more offspring
fossil	The remains or imprint of a prehistoric plant or animal, embedded in rock and preserved.
adaptive traits	Genetic features that help a living thing to survive.
suitable	Right or appropriate for a purpose
cladogram	A diagram used to show relations among organisms
theory	A system of ideas to explain something
opinion	A view not necessarily based on fact or knowledge

Theories of evolution

Charles Darwin (12/2/1809 – 19/2/1882)

Alfred Wallace (8/1/1823 – 7/11/1913)

English born evolutionary biologist, naturalist and geologist who was best known for his contributions to the science of evolution. He first formulated his theory in his book "On the Origin of Species" in 1859.

Darwin used fossils to support his theory of evolution.

British naturalist, explorer, geographer, anthropologist, biologist and illustrator. He is best known for independently thinking up the theory of evolution through natural selection.

Darwin

- Darwin discovered the finches on the Galapagos Island in 1835 had different beaks.
- Different beaks are adapted to pick up different foods.

Offspring

Animals and plants produce offspring that are similar but not identical to them. Offspring often look like their parents because features are passed on.

Variation

In the same way that there is variation between parents and their offspring, you can see variation within any species even plants.

Adaptive traits

Characteristics that are influenced by the environment the animals live in. These adaptations can develop as a result of many things, such as food or climate. Examples include scars, language spoken, sporting ability.

Inherited traits

These are characteristics from your parents e.g. eye colour, hair colour, skin colour, whether your earlobes are attached and if you can roll your tongue are examples.

Habitats

A good habitat should provide shelter, water, enough space and plenty of food.

Environments

There are many different types of environment around the world. Polar regions, deserts, rainforests, oceans, rivers, and grasslands are all environments.