

The Knowledge

Supporting the National Curriculum



Knowing More Remembering More Learning More

Evolution and Inheritance

ARDLEIGH GREEN
JUNIOR SCHOOL

Year 6
Science

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.

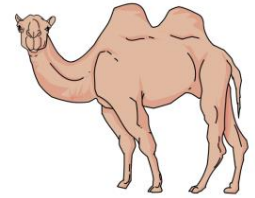
They can include hair colour, eye colour and height. However, **environmental factors** are important too.



Adaptation

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

Camels have long **eyelashes** to **protect** their eyes from the sand. They have **humps** to **store food** and 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

- Epiphytes are plants which can **grow** on the **surface** of another plant
- Some plants contain **toxic minerals** to **protect** themselves from **predators**
- Other plants can **store water, trap insects** and **smother** other plants



Mary Anning was a **palaeontologist** who found and collected many **fossils** along the **Jurassic Coast** in Dorset. She was the first person to uncover a full ichthyosaurus skeleton. Fossils provide information about **living things** that are now **extinct**.

Natural Selection

Natural selection is when **organisms** that are **best suited** to their **environment survive** and pass on their **genetic traits**. At the same time, organisms that are less likely to survive tend to be **eliminated** from the **ecosystem**. The **fittest**, most **adapted** organisms **survive** and **multiply** whilst the least adapted die out.

Natural selection is key to explaining **evolution**. Evolution is a theory that states that all species that exist today developed from previous species. For example, some scientists believe that humans evolved from apes!

Charles Darwin was a famous naturalist who studied **finches** and **tortoises** on the **Galapagos Islands**. He suggested that some species may share a common ancestor and **evolve** to suit their habitats. He called this process **natural selection**.



Key Vocabulary

- inherit:** when features are passed on from parents to offspring
- adaptation:** changes or special features of a living thing to help it live in a habitat
- fossil:** the remains or impression of a prehistoric plant or animal embedded in rock
- Mary Anning:** a famous palaeontologist who discovered fossils on the Jurassic Coast
- paleontologist:** a scientist that studies the remains of plants and animals found as fossils
- Charles Darwin:** an English naturalist, best known for his theory of evolution
- evolved:** how living things gradually change over time
- natural selection:** survival and reproduction of the fittest
- ancestor:** a person/living thing an organism is descended from
- homo sapiens:** the scientific name for the human species

Test Yourself

- What characteristics and variations are inherited from the parents of offspring?
- How are animals adapted to their environment?
- How are plants adapted to their environment?
- How do fossils provide information about living things that are now extinct?
- How does natural selection cause living things to evolve?
- Who was Charles Darwin and what were his findings at the Galapagos islands?
- How have humans evolved?