Knowledge Organiser: year 6 Evolution and Inheritance

Careers connected to Evolution and Inheritance: Geneticist, DNA Analyst, Biological Researcher, Conservationist

Lesson Sequence

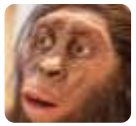
1. Understand how offspring vary and are not identical to their parents

2. Learn about animal adaptations

3. Learn about plant adaptations

4. Explore what we can learn from fossils

5. Explore the theory of evolution by natural selection



6. Explore human evolution

Characteristics and Variation

A characteristic describes how something looks or how it behaves. **Characteristics** can be passed on from parents to their offspring, meaning that they can be **inherited**. They can include hair colour, eye colour and height. However, **environmental** factors are important too.

Charles Darwin, the Galapagos Islands and Human Evolution

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.

Australopithecus
Homo habilis
Homo erectus
Homo heidelbergensis/ neanderthalensis
Homo sapiens

3.6 million years ago
↓
Human Evolution
↓
Today

Adaptations

Plants and animals have numerous **adaptations** which help them to survive in their **habitats**.

- Camels have humps to store food, two rows of eyelashes and small slits for nostrils
- 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

Fossils

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.

Rocket Words

	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
	epiphytes	plants that grow on the surface of other plants
	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
	palaeontologist	a scientist that studies the remains of plants and animals found as fossils
	ichthyosaurus	a large marine reptile that lived 201-194 million years ago
	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

What I already know:

KS1 & KS2

- ❑ I understand there is a variety of life on Earth
- ❑ I know that some animal's differences are important to their survival
- ❑ I know how animals and plants reproduce
- ❑ I know how fossils form over time

What I will learn now:

Year 6

- ❑ **I recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago**
- ❑ **I recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents**
- ❑ **I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution**

What I will learn next:

KS3

- ❑ I know heredity as the process by which genetic information is transmitted from one generation to the next
- ❑ I know the variation between individuals within a species being continuous or discontinuous
- ❑ I know the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection
- ❑ I know that changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction
- ❑ I know the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material

Knowledge Organiser: Evolution and Inheritance

Before & After Test

Match up the stages of human evolution with a number so that they are in the correct order.

- Homo habilis 1.
- Homo sapiens 2.
- Australopithecus 3.
- Homo erectus 4.
- Homo heidelbergensis 5.

If the 2 dogs in the picture were to have offspring, what would they look like?

Draw lines to match up each picture of a plant/animal adaptation with the description which tells us why it is useful.

can use a special scent to attract and trap insects

this stores rich fat as a form of nutrition

thick layers of fat and fur provide insulation

can change the colour of their skin to camouflage against predators

can grow on the surface of another plant instead of in the soil

Look at the pictures and answer the questions.

1. In which area of England can many fossils from the Jurassic era be found?
2. What is the difference between these 2 pictures?