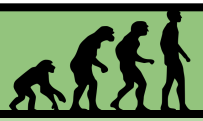
Year 6 - Swans

# Science - Evolution & Inheritance (Biology Yr 6 )

## Essential Question - Have we always looked like this?



Spring 1

What I should already know : In Year 1 the children will have learnt about Mary Anning and understand how fossils are formed and that they help inform us about the past. They will have learnt about adaptations in animals. Children have learnt about the life cycles of different kinds of animals and that living things produce offspring.

## Enquiry Questions:

How do offspring vary and why aren't they identical to their parents?

How have plants adapted to their environment?

What is the theory of evolution by natural selection?

How have humans evolved?

How do fossil records help us understand evolutionary relationships?

## Key Vocabulary

**Adaptation/adapted** - changes or special features of a living thing to help it live in a habitat/how a living organism has evolved to suit its environment
**Ancestor** -a person/living thing an organism is descended from
**Charles Darwin** - an English naturalist, best known for his theory of evolution evolved how living things gradually change over time
**Competition** - When two or more living things struggle against each other to get the same resource
**Characteristic** - a feature or something that helps describe how it looks or what it can do.
**Eiphytes** - plants that grow on the surface of other plants
**Extinct** - no longer has any living members, that existed in the past.either in the world or in a particular place
**Environmental** - the surroundings and conditions for a living thing
**Evolution:** Theory that the animal and plant species living today descended from species
**Fossil** - the remains or impression of a prehistoric plant or animal embedded in rock
**Geme** - the basic unit of heredity. This means that genes determine what traits are passed down from a mother and father to their child.
**Genetics - the study of genes and heredity. Heredity is the passing of genetic information and traits (such as eye color and an increased chance of getting a certain disease) from parents to offspring.**
**Homo sapiens** - the scientific name for the human species
**Hypothesis - prediction**
**Ichthyosaurus** - a large marine reptile that lived 201-194 million years ago
**Inherit** - when features are passed on from parents to offspring
**Mary Anning** - A famous palaeontologist who discovered fossils on the Jurassic Coast
**Neanderthal - an extinct species of human that was widely distributed in ice-age Europe between c. 120,000 and 35,000 years ago, with a receding forehead and prominent brow ridges.**
**Natural selection** - survival and reproduction of the fittest
**Offspring** - person or animal's young
**Palaeontologist** - a scientist that studies the remains of plants and animals found as fossils
**Pollinate** - to move a plant's pollen so it can reproduce
**Prinate** - any mammal of the group that includes the lemurs, lorises, tarsiers, monkeys, apes, and humans
**Repeat readings** - take more than one reading,
**Reprodution** - the production of offspring
**Traits** - A distinguishing characteristic or quality

## Scientific Skills

Skills and Knowledge
Pupils will:
Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago

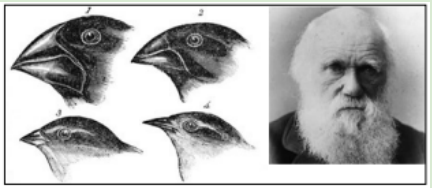
Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents

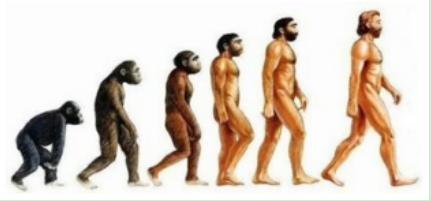
Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to Evolution

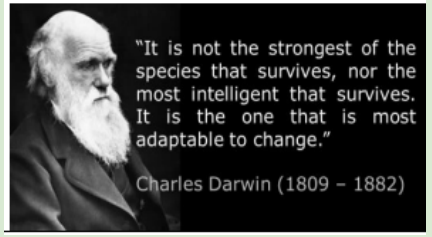
(Working Scientifically) Y
WS1) plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
WS2) identify scientific evidence that has been used to support or refute ideas or arguments. .
WS3) take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where possible.
WS6) u use test results to make predictions to set up further comparative and fair tests.
WS7) record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables and bar and line graphs.
WS8) gather & record data to help answer questions
WS9) report and present findings from enquiries, including conclusions, casual relationships and explanations of and degree and trust in results, in oral and written forms such as displays and other presentations.
Pupils should read and spell scientific vocabulary correctly.

## Significant Person

**Charles Darwin**, 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








**Variation** - a change or slight difference

**Adaptive Traits**

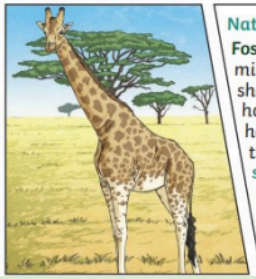
Characteristics that are influenced by the environment the living things live in. These adaptations can develop as a result of many things, such as food and climate.

**Inherited Traits**

Eye colour is an example of an inherited trait, but so are things like hair colour, the shape of your earlobes and whether or not you can smell certain flowers.

**Variation**

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



**Natural Selection**

Fossils of giraffes from millions of years ago show that they used to have shorter necks. They have gradually evolved through natural selection to have longer necks so that they can reach the top leaves on taller trees.

**Fossils** are the preserved remains, or partial remains, of ancient animals and plants. **Fossils** let scientists know how plants and animals used to look millions of years ago. This is proof that living things have evolved over time.

If an organism is not **suited** to its environment, then it will become extinct.

# How will climate change affect our living planet?

**Classification** of organisms means putting them into groups of similar organisms based on their characteristics.
There are five kingdoms of living organisms: **animals, plants, fungi, bacteria** and **protoctists.**

The main groups of vertebrates (animals with backbones) are:
**Fish** – have gills and scales
**Amphibians** – have moist skin to breathe through, lay eggs in water
**Reptiles** – have scaly skin, lay leathery eggs on land
**Birds** – have beaks and feathers, lay hard shelled eggs
**Mammals** – have fur and feed their babies on milk

Links to Other Areas of the Curriculum: History - Charles Dariwn - Victorians; Mary Anning - fossils