

# Year 4/5 Science Knowledge Organiser – Humans and other animals over time

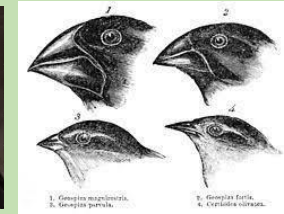
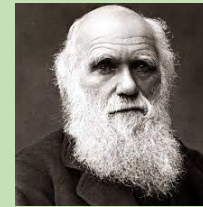
## Vocabulary

<b>evolution</b>	the process by which living things change gradually over time
<b>characteristic</b>	the qualities or features of an organism that make them recognisable
<b>organism</b>	any animal, plant or other living thing
<b>offspring</b>	a person's children or an animal's young
<b>variation</b>	the different characteristics between living things in a species
<b>species</b>	a group of living things with very similar characteristics who can produce offspring together to make more living things of the same type.
<b>reproduce</b>	to have offspring (babies)
<b>natural selection</b>	Natural selection is a characteristic (for example the strong beak of a Galapagos woodpecker finch) that improves the success of a living thing in its environment and makes it more likely to survive and reproduce. Offspring will also have this characteristic and be more likely to survive and reproduce when they become adults.
<b>adaptation</b>	Adaptation is how living things are specialised to suit their environment. Once a characteristic becomes more common in a population the species is said to have adapted.
<b>environment</b>	where an organism lives and the things which influence them in this place

## Key knowledge

### The theory of evolution

Charles Darwin was born in England in 1809 and died in 1882. He was a scientist who travelled on a boat called "The Beagle" to the Galapagos Islands in the Pacific Ocean. Darwin noticed that the finches there had adapted to each individual island environment. He wrote a book called, "On the Origin of Species" where he explained his theory of evolution. This theory is now widely accepted as scientific fact.



### How evolution works

Not all individuals of a species are identical - there is variation between them. The individuals of a species who are best adapted to their environment are most likely to survive. These successful individuals are more likely to reproduce and pass their useful adaptations onto their offspring. Individuals that are poorly adapted are less likely to survive. Over a very long time, the characteristics that help a species to survive become more common and, gradually, that species changes. Given enough time, these small changes can add up to the extent that a new species can evolve.

### The Geological Eras (from the current era)

**Cenozoic Era (meaning "recent life")** approx. 66 million years ago until present. Modern humans first appear (homo sapiens) during this era. The extinction of larger predators (particularly dinosaurs) allowed smaller mammals to thrive.

**Mesozoic Era** began approx. 250 million years ago - age of the dinosaurs

**Paleozoic Era** (also Palaeozoic) began approx. 541 million years ago - age of marine animals

**Proterozoic Era** began approx. 2.5 billion years ago with single celled creatures like bacteria