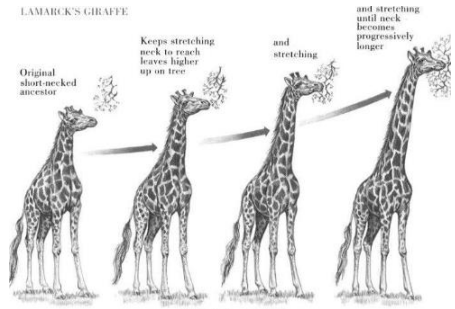
KNOWLEDGE ORGANISER YEAR 6 MISSION: WHY IS NATURE SO VARIED?

Charles Darwin

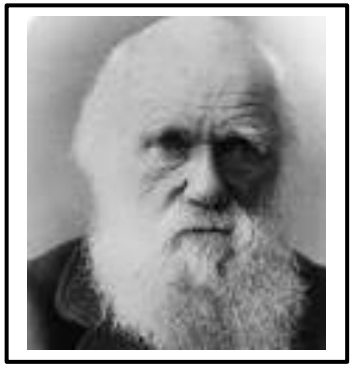
In 1831, a young naturalist called **Charles Darwin** boarded a ship called the **HMS Beagle** and set out on a fantastic five-year voyage around the world to study and collect animal, plant and rock samples. Darwin was amazed at the variety of species he saw on his adventure. The Beagle visited the **Galápagos Islands** (a group of 19 islands and more than 100 islets and rocks in the Pacific Ocean, about 1,000km off the coast of Ecuador in South America) and **collected specimens** and made notes that would eventually change the way people thought about the world.

Darwin noticed that although the different islands had similar creatures and plants, many seemed to have adapted to suit their local environments. Finches (a type of bird), for example, had different beaks on each island, suited to eating the particular seeds or insects found there!

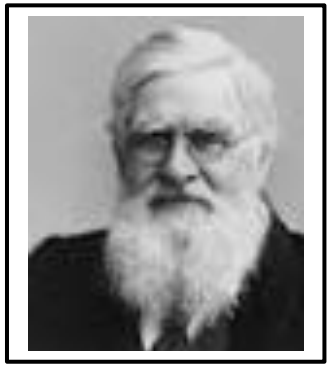
In 1858, Darwin revealed his '**theory of evolution by natural selection**', to explain how animals adapted to their environment to survive. He published his book, ***On The Origin Of Species*** the next year. Darwin explained how species can '**evolve**' (change or develop) over time through a process called '**Natural Selection**'. This was a shock! Until then, it was widely believed that God had created everything at once.



Darwin's Finches



Charles Darwin



Alfred Wallace

Alfred Wallace

Alfred Russel Wallace (8 January 1823 – 7 November 1913) was a British naturalist, explorer. He is best known for proposing a theory of natural selection. This was published in 1858 together with Charles Darwin's idea.

Wallace did extensive natural history exploring. He went first to the Amazon River basin with Henry Walter Bates, and later to Malaya and Indonesia. He wrote books on both these adventures. While in Indonesia he drew the *Wallace Line* which divides Indonesia into two parts. On one side are animals of Australasia. On the other side are species mostly of Asian origin. He wrote a wonderful book on the distribution of animals.

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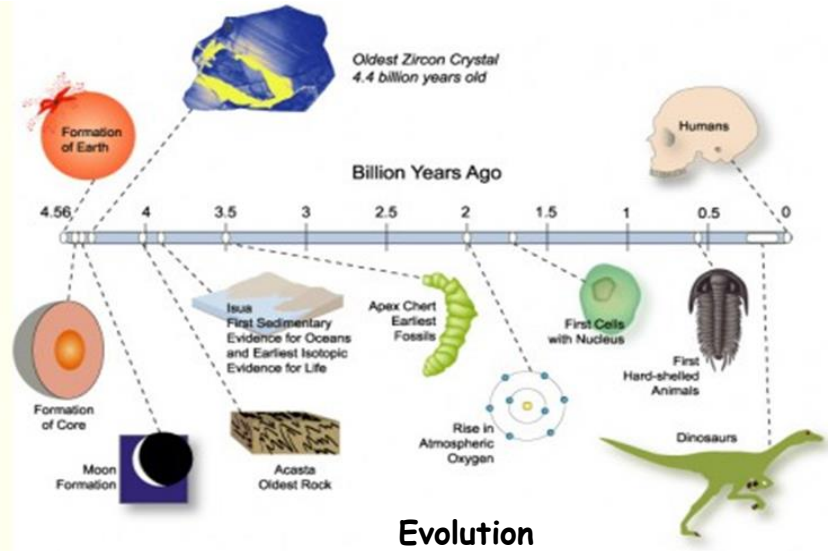
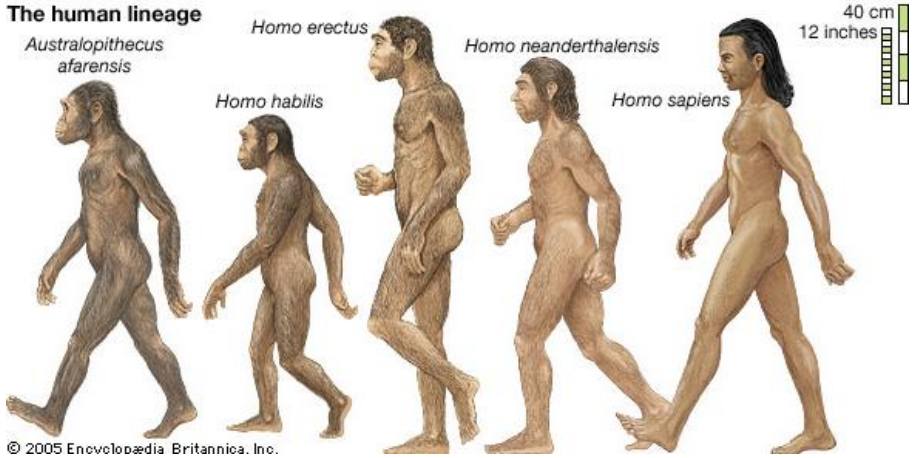


Evolution

Bacteria



Human Evolution

Key Vocabulary

Ancestor – A living thing from the past from which a modern plant or animal has evolved

Adaptation – The process of change so that an organism or species can become better suited to their environment

Breeding – The mating and production of offspring by animals

DNA – A substance that carries genetic information in plants and animals

Environment – The surroundings or conditions in which a person, animal, or plant lives

Evolution – The process by which different kinds of living organism are believed to have developed from earlier forms during the history of the earth

Extinct – when there are no more individuals of that species alive anywhere in the world – the species has died out

Fossil – The remains or impression of a prehistoric plant or animal embedded in rock and preserved

Gene – A part of the cell that controls or influences the appearance, growth etc. of a living thing

Key Vocabulary

Homo Sapiens – Our species which evolved about 300,000 years ago and means 'intelligent humans'

Inherit – To gain a quality, characteristic or predisposition genetically from a parent or ancestor

Mutation – Random changes between parent and offspring

Natural Selection – The idea that living things survive better and reproduce more if they are better adapted to a habitat

Offspring – A person's child or children/ an animal's young

Palaeontology – the study of fossils

Reproduction – The production of offspring by a sexual or asexual process

Selective breeding – The process by which humans use animal breeding and plant breeding to develop selective characteristics by choosing particular animals and plants

Species – a category in the classification system. Living things of the same type belong to the same species