

Knowledge Organiser - Year 6 - Science: Evolution and

Inheritance



Evolution is the process by which different kinds of living organism are believed to have developed from earlier forms during the history of the Earth.

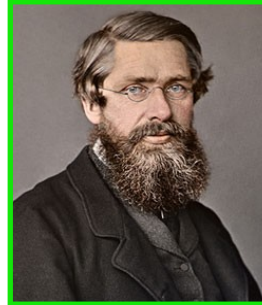
Key Vocabulary

Adaptation	The process of change so that an organism or species can become better suited to their environment.
Characteristics	A feature or quality belonging typically to a person, place, or thing and serving to identify them.
Dinosaur	Any of a group (Dinosauria) of extinct, often very large, carnivorous or herbivorous archosaurian reptiles that have their hind limbs extending directly beneath their body.
Fossil	The remains or impression of a prehistoric plant or animal embedded in rock and preserved.
Habitat	The natural home or environment of an animal, plant, or other organism.
Inherit	To gain a quality, characteristic or predisposition genetically from a parent or ancestor.
Natural Selection	The process whereby organisms better adapted to their environment, tend to survive and produce more offspring. The theory was the idea of Charles Darwin, and it is now regarded as the main process that brings about evolution.
Offspring	A person's child or children. An animal's young.
Prehistoric	A word that describes something that comes from a time before history was recorded.
Selective breeding	The process by which humans use animal breeding and plant breeding to develop selective characteristics by choosing particular animals and plants.
Trace Fossil	Indirect evidence of life in the past such as the footprints, tracks, burrows, borings and waste left behind by animals.
Trait	A distinguishing quality or characteristic belonging to that living organism.
Variety	The quality or state of having different forms or types.

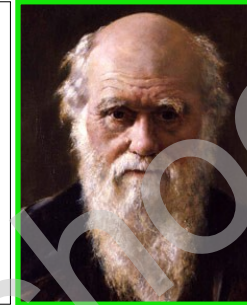
Working Scientifically

Explore ideas and raise different kinds of questions; They should use and develop keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment. They should identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their ideas and begin to separate opinion from fact. They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.

Key Question: How do we identify organisms?



Alfred Russel Wallace (1823-1913) was a man of many talents - an explorer, collector, naturalist, geographer, anthropologist and political commentator. Most famously, he had the revolutionary idea of evolution by natural selection entirely independently of Charles Darwin.



Charles Darwin (1809-1882) was also a naturalist and explorer. He loved collecting beetles! He set sail in 1831 to South America on a ship called HMS Beagle and on this five year expedition, he began to form the ideas for his book, 'The Origin of the Species' which had the same ideas as Wallace.

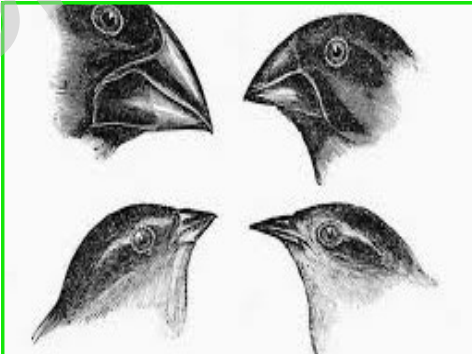


Gorilla skeleton Human skeleton

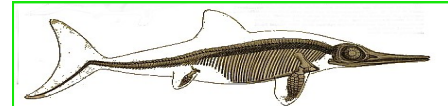
Chimpanzees are our closest living relatives. They split from our branch of the family about 6 million years ago. They live in Central and West Africa.

We did not evolve from chimps or gorillas but we share a common ancestor.

Darwin was fascinated by the Galapagos Islands and found that each island had a different type of finch that ate different foods. They had adapted to have the right beak for the correct food product.



Fossils tell us a lot about living things that died millions of years ago. The parts that become fossilised can tell us about how they looked, how big they were and even what they ate. Some things we can't work out as easily, such as skin colour and texture, as skin does not fossilise. **Mary Anning** (1799-1847) was a scientist from Dorset who found many fossilised remains at Lyme Regis. In 1811, she uncovered an almost complete skeleton of a new dinosaur—an Ichthyosaur, which means fish lizard! Mary went on to make more incredible discoveries in her life.



In some ways we inherit features from our parents, things like eye colour, nose shape, whether we can roll our tongue or not. Then there are environmental factors that change us like diet, exercise, hair length. We are a mixture of characteristics from both parents and from how we choose to live our lives. The most successful animals and plants are those that are perfectly adapted to their habitat. This happens gradually over time by being born with an advantage, successfully breeding and then passing this new advantage on to the next generation. They are also successful and so natural selection causes this new trait to be the most common. Examples of this are white, thick furred, big pawed polar bears. Or the tallest giraffes that can reach the highest trees.