Evolution

Latin = *evolvere* = to unroll or roll out

Charles Darwin and Alfred Wallace

Theory of Evolution
1859
On the Origin of Species

living things developed from earlier and different species

species change as time rolls out

species

plant or animal

similar characteristics, but not always identical

breed with each other

produce similar offspring

survival of the fittest
(natural selection)

key mechanism of evolution

living things become most suited to the environment

polar bear   brown bear

weaker and less suitable species do not survive

adaption

process of change over a very long time

living things become well-matched to their environment through natural selection

inherited characteristics

eye colour

hair colour

ear lobes

dimples

genes carry inherited characteristics

DNA is biological information

passed from parent to offspring

acquired characteristics

blacksmiths get stronger arms by hammering

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stronger arms do not get passed to offspring by the effect of hammering

characteristics passed on through genes
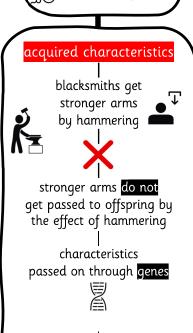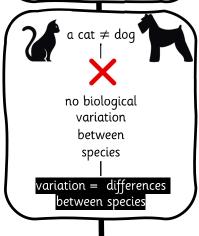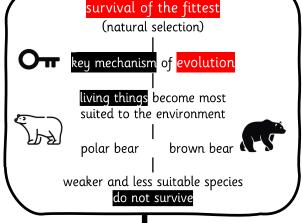
(inherited characteristic)

fossil

remains or traces of a living thing

converted to rock

tells us about life on Earth millions of years ago

biological variation

differences within same species

Latin = *Canis familaris*
(domestic dog species)

a cat ≠ dog

❌

no biological variation between species

variation = differences between species

biodiversity

variety of life on Earth

the difference between species

measured by species richness in an environment