

**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



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

characteristics passed on through genes



(inherited characteristic)

biological variation

differences

within same species

Latin = *Canis familiaris* (domestic dog species)a cat \neq 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