

Class 4 Knowledge Organiser Spring 2

Why do turtles have shells? Evolution and classification

Key Vocabulary

Adaptation – the process of changing.

Characteristics – a feature or quality belonging typically to a person, place, or thing and serving to identify them.

DNA – carries specific genetic information inside every living thing.

Ecosystem – a physical environment where things live.

Environment – the surroundings in which a person, animal or plant lives.

Evolution – a theory that states that all species that exist today developed from previous species.

Genetics – inherited characteristics.

Inherit – to pass on something.

Inheritance – something that has been passed on.

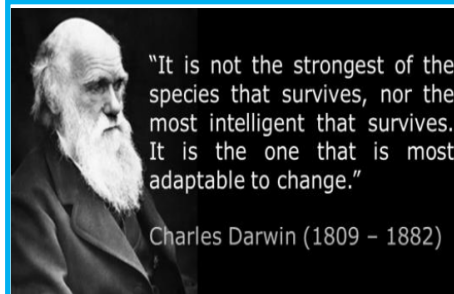
Natural Selection – when organisms that are best suited to their environment survive and pass on their genetic traits.

Organism – living things.

Trait – a feature or quality belonging typically to a person, place, or thing and serving to identify them.

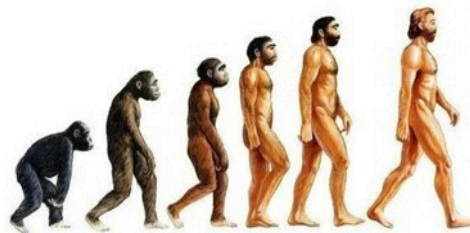
Natural Selection

Natural selection is the term coined by Darwin, used to describe how animal species continue and survive. It is when organisms are best suited to their environment survive and pass on their genetic traits. This is a mixture of genetics, characteristics and adaptation that has spanned over millions of years. At the same time, organisms that are less likely to survive tend to be eliminated from the ecosystem. The fittest, most adapted organisms survive and multiply whilst the least adapted die out.



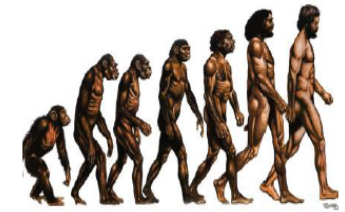
Charles Darwin (1809 – 1882)

1. Individuals within a population differ.
2. The differences are, at least in part, passed from parents to offspring.
3. Some individuals are more successful at surviving and reproducing than others.
4. The successful individuals succeed because of variant traits they have inherited and will pass onto their offspring.



Evolution

Evolution is the gradual process by which different kinds of living organism have developed from earlier forms over millions of years. Scientists have proof that living things are continuously evolving – even today!



Inherited Traits

Eye colour is an example of an **inherited trait**, but so are things like hair colour, the shape of your earlobes and whether or not you can smell certain flowers.



Inheritance

When parents have offspring, they pass on their physical traits. The offspring inherit their parents' qualities. This means that most offspring look like their parents but they are not identical. The offspring may take characteristics from the father, the mother or a mixture of both.

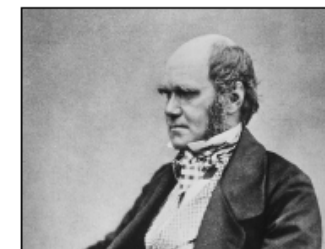
Adaptation

Adaptations are any physical or behavioural characteristics of an animal that help it to survive in its environment. Living things are adapted to their habitats. This means that they have special features that help them to survive. It's not just animals that are adapted to their environment, plants are too. A cactus is well adapted for survival in the desert. They have long roots to collect water from a large area and a stem that can store water for a long period of time. The animals and plants in one habitat are suited to live there and may not be able to survive in other habitats. When a habitat changes, the animals and plants that live there are affected.

Living Things		Habitat	Adaptive Traits
polar bear		arctic	Its white fur enables it to camouflage in the snow.
camel		desert	It has wide feet to make it easier to walk in the sand.
cactus		desert	It stores water in its stem.
toucan		rainforest	Its narrow tongue allows it to eat small fruit and insects.

Super Scientist!

Charles Darwin was an English Naturalist born on February 12, 1809 in Shrewsbury, England. He is best known for developing a **theory of evolution** to explain biological change. He went on a voyage to study animals on the **Galapagos Islands**. On his voyage, Darwin studied **tortoises**. He noticed that each island had a different species of tortoise. He also studied **finches**. Each island had a **different species** of finch. He **wrote many books about his voyage**, Journal of Researches, Coral Reefs, Volcanic Islands and Geographical Observations on South America.



Question 1. A gradual change that takes place over many generations is called:	Start of unit	End of unit	Question 5. When we have the same characteristic as our parents or ancestors, we _____ that characteristic.	Start of unit	End of unit
A. inheritance			A. have inherited		
B. mutations			B. have mutated to get		
C. evolution			C. have adapted to		
D. reproduction			D. have maladapted to		
Question 2. Evolution occurs when there is competition to survive. This is called...	Start of unit	End of unit	Question 6. The dodo was unable to adapt to its environment to survive. This means that the dodo is now...	Start of unit	End of unit
A. reproduction			A. extinct		
B. natural selection			B. endangered		
C. variation			C. alive		
D. biodiverse			D. flying		
Question 3. Evidence of evolution comes from...(tick two)	Start of unit	End of unit	Question 7 Charles Darwin...	Start of unit	End of unit
A. fossils			A. found the first fossil		
B. living things			B. was made famous by his theory of evolution		
C. museums			C. found remains of the dodo		
D. food chains			D. Don't know		

Questions I have at the start:

Answered?

YES NO