

Year 6 – Knowledge Organiser Summer Term – Evolution (Science)

What should I already know?

Which things are living and which are not.

Identifying animals (e.g. amphibians, reptiles, birds, fish, mammals, invertebrates) and plants using classification keys

Animals that are carnivores, herbivores and omnivores.

Animals have offspring which grow into adults.

The basic needs of animals for survival (water, food, air)

Some animals have skeletons for support, protection and movement.

Food chains, food webs and the role of predators and prey.

Features of habitats and the animals and plants that exist there (biodiversity)

The life cycle of some animals and plants
Sometimes environments can change and this has an effect on the plants and animals that exist there

Living things breed to produce offspring which grow into adults. This is called reproduction.

The role of Mary Anning in palaeontology and the discovery of fossils.

The features of some rocks and the role they play in the formation of fossils

What will I know by the end of the unit?

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What is evolution?	<ul style="list-style-type: none"> ● Evolution is a process of change that takes place over many generations, during which species of animals, plants, or insects slowly change some of their physical characteristics. This is because offspring are not identical to their parents. ● It occurs when there is competition to survive. This is called natural selection. ● Difference within a species (for example between parents and offspring) can be caused by inheritance and mutations. ● Inheritance is when characteristics are passed on from generation to the next. ● Mutations in characteristics are not inherited from the parents and appear as new characteristics.
How do we know about evolution?	<ul style="list-style-type: none"> ● Evidence of evolution comes from fossils - when these are compared to living creatures from today, palaeontologists can compare similarities and differences. ● Other evidence comes from living things - comparisons of some species may reveal common ancestors.
What is adaptation?	<ul style="list-style-type: none"> ● Adaptation is when animals and plants have evolved so that they have adapted to survive in their environments. For example, polar bears have a thick layer of blubber under their fur to survive the cold, harsh environment of the Arctic while giraffes have long necks to reach the leaves on trees. ● Some environments provide challenges yet some animals and plants have adapted to survive there. ● Sometimes adaptations can be disadvantageous. One example of this can be the dodo, which became extinct as it lost its ability to fly through evolution. Flying was unnecessary for the dodo as it had lived for so many years without predators, until its native island became inhabited. ● When adaptations are more harmful than helpful, these are called maladaptations.

Vocabulary

Adaptation - a change in structure or function that improves the chance of survival for an animal or plant within a given environment

Ancestor - an early type of animal or plant from which a later, usually dissimilar, type has evolved

Biodiversity - a wide variety of plant and animal species living in their natural environment

Biome - a large naturally occurring community of animals and plants occupying a major habitat

Breeding - the process of producing plants or animals by reproduction

Characteristics - the qualities or features that belong to them and make them recognisable

Environment - all the circumstances, people, things, and events around them that influence their life

Evolution - a process of change that takes place over many generations, during which species of animals, plants, or insects slowly change some of their physical characteristics

Extinct - no longer has any living members, either in the world or in a particular place

Fossil - the hard remains of a prehistoric animal or plant that are found inside a rock

Generation - the act or process of bringing into being; through reproduction, especially of offspring

Inherit - If you inherit a characteristic you are born with it, because your parents or ancestors also had it.

Maladaptation - the failure to adapt properly to a new situation or environment

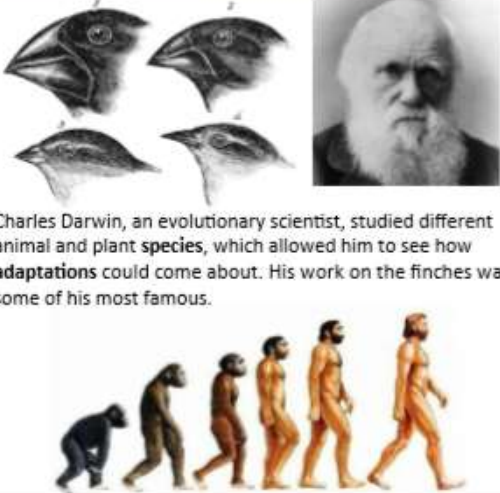
Mutation - characteristics that are not inherited from the parents or ancestors and appear as new characteristics.

Natural selection - a process by which species of animals and plants that are best adapted to their environment survive and reproduce, while those that are less well adapted die out

Offspring - a person's children or an animal's young

Palaeontology - the study of fossils as a guide to the history of life on Earth

Reproduction - when an animal or plant produces one or more individuals similar to itself

		<p>Species - a class of plants or animals whose members have the same main characteristics and are able to breed with each other survive continue to exist</p> <p>Theory - a formal idea or set of ideas that is intended to explain something variation a change or slight difference</p>
<p><u>Scientific enquiry</u></p> <ul style="list-style-type: none">- Research the work of Charles Darwin and Alfred Russel Wallace.- Create a fact file of an animal or plant identifying how it has adapted to its environment and how it has evolved to survive.- Create a new planet and describe the environmental features. What animals and plants can live there? How have they adapted to survive?		<p><u>Diagrams</u></p> <div data-bbox="1487 352 2049 906"><p>Diagram</p><p>Charles Darwin, an evolutionary scientist, studied different animal and plant species, which allowed him to see how adaptations could come about. His work on the finches was some of his most famous.</p></div>