



Knowledge Organiser	Subject: Science	Topic: Evolution and Inheritance	Year: 6
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<u>Key Knowledge</u> All living things produce offspring with inherited traits from their parents. Sexual reproduction causes variation, so offspring aren't identical to their parents or each other. Plants and animals have adaptations suited to their environments, but if the environment changes quickly, some may not survive. When changes are gradual, better-suited variations survive, reproduce, and pass on their traits. Over time, these traits become more common, and eventually, significant changes can lead to new species, a process called evolution. Fossils provide evidence of ancient life and support evolutionary theory, as observed by scientists like Darwin and Wallace. <u>Common Misconceptions</u> • Adaptation occurs during an animal's lifetime: giraffes' necks stretch during their lifetime to reach higher leaves and animals living in cold environments grow thick fur during their life. • Offspring most resemble their parents of the same sex, so that sons look like fathers. • All characteristics, including those that are due to actions during the parent's life such as dyed hair or footballing skills, can be inherited. • Neanderthals and dinosaurs were alive at the same time.			<u>Key Learning</u> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago. • Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. • Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. <u>Disciplinary Skills</u> • Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations. • Identifying scientific evidence that has been used to support or refute ideas or arguments.		
<u>Key Concepts</u>					
Inheritance and Variation: Offspring inherit traits from their parents, but due to sexual reproduction, they are not identical, creating natural variation within a species.		Adaptation and Survival: Organisms develop characteristics suited to their environment. Gradual environmental changes favour individuals with beneficial variations, leading to the survival and reproduction of the best-adapted traits.		Evolution and Evidence: Over long periods, accumulated adaptations can create new species, a process known as evolution. Fossils and scientific observations, like those of Darwin and Wallace, provide evidence supporting this theory.	

The Big Question

Why do we look the way that we do?



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Key Vocabulary	
Offspring	The young animal or plant produced by the reproduction of a species.
Inheritance	The passing of characteristics from parents to offspring.
Variations	The differences between individuals within a species.
Characteristics	The distinguishing features or qualities specific to a species.
Adaptation	A trait or characteristic that changes to increase a living thing's chances of surviving and reproducing.
Habitat	The specific area or place where particular animals and plants live.



Offspring

Animals and plants produce **offspring** that are similar but not identical to them. **Offspring** often look like their parents because features are passed on.

Variation

In the same way that there is **variation** between parents and their **offspring**, you can see **variation** within any species, even plants.



Linking Thinking Across Our Learning Journey						
Early Years	Year One	Year Two	Year Three	Year Four	Year Five	Year Six
		Living things and their habitats Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other. Animals, including humans Notice that animals, including humans, have offspring which grow into adults.	Plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. Rocks, fossils and soils Describe in simple terms how fossils are formed when things that have lived are trapped within rock.	Living things and their habitats Recognise that environments can change and that this can sometimes pose dangers to living things.	Living things and their habitats Describe the life process of reproduction in some plants and animals.	Evolution and Inheritance

Adaptive Traits

Characteristics that are influenced by the **environment** the living things live in. These **adaptations** can develop as a result of many things, such as food and climate.



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.

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.