Year 6 – Knowledge Organiser

Topic – Evolution Spring (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**?	• **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**?	• 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**?	• **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

		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 Theory - a formal idea or set of ideas that is intended to explain something variation a change or slight difference
<u>Scientific enquiry</u> - 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?		<u>Diagrams</u>