Coley Primary School – Knowledge Organiser

SUBJECT FOCUS: Biology strand	Science: Evolution and Inheritance	YEAR 6	TERM 3

WHAT? – Key Knowledge

- 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.
- Be introduced to the idea that characteristics are passed from parents to their offspring, i.e. different breeds of dogs, and what happens when, for example, Labradors are crossed with poodles.
- Appreciate that variation in offspring over time can make animals more or less able to survive in particular environments, for example, by exploring how giraffes' necks got longer.
- Find out about the work of palaeontologists such as Mary Anning and about how Charles Darwin and Alfred Wallace developed their ideas on evolution.
- Use scientific language: say, read and spell scientific vocabulary

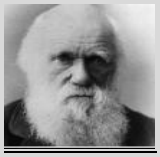
Famous Scientists

Mary Anning
(1799 -1847)



Mary Anning was an English fossil collector, dealer, and **palaeontologist** who became known around the world for important finds she made in Jurassic marine fossil beds in the cliffs along the English Channel at Lyme Regis in the county of Dorset in Southwest England. Anning was one of the most influential people in history and instrumental in changing the way we see the world. Mary Anning was a fossil hunter! The discovery of the plesiosaur made her famous. Scientists came to Lyme Regis eager to meet and talk with her.

Charles Darwin
(1809 -1882)



Charles Robert Darwin was an English born **evolutionary biologist**, naturalist and geologist who was best known for his contributions to the science of evolution. He first formulated his theory in his book "On the Origin of Species" in 1859. He is most famous for his work on natural selection, the idea that all species of life have evolved over time from common ancestors. He explains how animals adapted to their environment to survive.

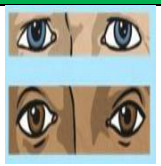
Alfred Wallace
(1823 – 1913)



Alfred Russel Wallace was a British **naturalist**, anthropologist and explorer. He is famous for jointly publishing his ideas about the theory of **evolution** through **natural selection** with Charles Darwin. It changed the way people thought about animals and plants. Wallace travelled the world and studied plants and animals. His ideas were very important in developing how we think about nature today.

What is inheritance?

Inheritance refers to the characteristic traits that are genetically passed to offspring from their parents e.g. hair colour, eye colour, height etc. Darwin refers to this as **natural selection** when the strongest traits survive over generations.



Did you know… **Fossils** are the preserved remains, or partial remains of ancient animals and plants. Fossils let scientists know how plants and animals used to look millions of years ago.



Working Scientifically Challenge:
Let's think like scientists…

Can they…

- give reasons for why living things produce offspring of the same kind?
- give reasons for why offspring are not identical with each other or with their parents?
- explain the process of evolution and describe the evidence for this?
- begin to appreciate that variation in offspring over time can make animals more or less able to survive in particular environments?
- talk about the life of Charles Darwin?

WHAT? – Key vocabulary

evolution	The process by which different kinds of living organisms are believed to have developed from earlier forms during the history of the earth.
inherit	Derive (a quality, characteristic, or predisposition) genetically from one's parents or ancestors.
adaptation	The process of change by which an organism or species becomes better suited to its environment
fossil	The remains or impression of a prehistoric plant or animal embedded in rock and preserved in petrified form
organism	It is an individual animal, plant, or single-celled life form
naturalist	Someone who is an expert in or student of natural history
geology	The science which deals with the physical structure and substance of the earth, their history, and the processes which act on them.
biology	The study of living organisms
biologist	Someone who is an expert in or student of biology
palaeontology	the branch of science concerned with fossil animals and plants
palaeontologist	an expert in or student of palaeontology
Population, theory, marine, generation, variation, adaptive traits, inherited traits, natural selection,	

Diagrams and symbols

Living Things	Habitat	Adaptive Traits
 polar bear	 Artic	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.

I wonder… Can I …

- explain how some living things adapt to survive in extreme conditions?
- analyse the advantages and disadvantages of specific adaptations, such as being on two rather than four feet?
- begin to understand what is meant by DNA?

Possible experiences: *Curious minds…*

- **Visit The National History Museum** – **Discover** the largest collection of fossils in the UK and houses the Darwin Centre.
- **Visit Down House** – Explore where Charles Darwin lived and wrote '*On the Origin of the Species*'. His notebooks from his time on the HMS Beagle can be explored, as well as the gardens he used as his 'outdoor laboratory'.
- **Evolution and Inheritance**. by Nichola Tyrrell