Learning Journey	Science	Evolution & Inheritance. (Evolution & Natural Selection)	Year 6 Spring 1	

Building on prior learning	Theme overview	Preparing for future learning	Vocabulary
This is the first time that the children will have learned about Evolution and natural selection. However, this unit draws on every biology topic covered. They will have learnt about circulation and nutrients earlier in Y6. They will also have learned about 'Feeding relationships' and 'Plant reproduction' in Y4.	• Evolution happens. • Fossils provide evidence for evolution. • How does evolution happen? • Why are life cycles do different?	In KS3 children will learn more about genetics and evolution Inheritance, chromosomes, DNA and genes. Included will be learning on The heredity as the process by which genetic information is transmitted from one generation to the next □ a simple model of chromosomes, genes and DNA in heredity, including the part played by Watson, Crick, Wilkins and Franklin in the development of the DNA model □ differences between species □ the variation between species and between individuals of the same species means some organisms compete more successfully, which can drive natural selection □ changes in the environment may leave individuals within a species, and some entire species, less well adapted to compete successfully and reproduce, which in turn may lead to extinction □ the importance of maintaining biodiversity and the use of gene banks to preserve hereditary material.	• Sexual reproduction, asexual reproduction, male, female • Variation, similar, different. • Offspring, parents, family, siblings, inherit, characteristics, features. • Population • Reproduction, • Survive, extinct, gradual, evolve, evolution, fossils, natural selection, Charles Darwin • Environment, adapted • Life cycle, fertilisation, embryo, birth, growth, adult, mature, society, learning. • Evidence, theory.

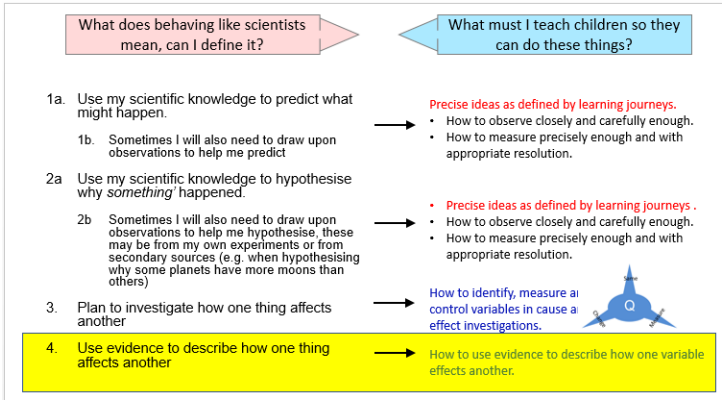
NC coverage and HWJS skills development	Knowledge organisers

National Curriculum:

- 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.

HWJS skills development

Details of the skills that will be taught within the unit. These should match up with the skills progression documentation



A Model of Skills Progression.

1. 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

2. Identifying scientific evidence that has been used to support or refute ideas or arguments

3. Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of

Chapter 1: Evolution happens.

•Over the last many millions of years there are many examples of organisms becoming extinct and others evolving into new organisms over many generations.

•The fossil record provides evidence for this.

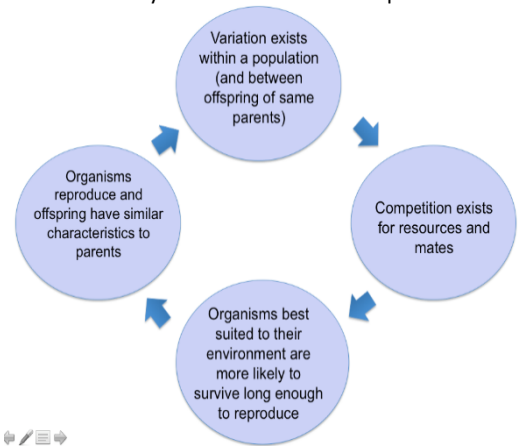
Chapter 2: Fossils provide evidence for evolution.

*The way fossils form and are found mean the fossil record is an incomplete record of all evolution.

*Scientists have had to piece together evidence to work out how organisms evolve.

Chapter 3: How does evolution happen?

Darwin's theory of Natural Selection explains how evolution occurs. It can be simplified in the flow chart.



•Some organisms reproduce sexually where offspring inherit information from both parents, others reproduce asexually by making a copy of a single parent. A sexual reproduction results in little variation in a population that makes evolution less likely.

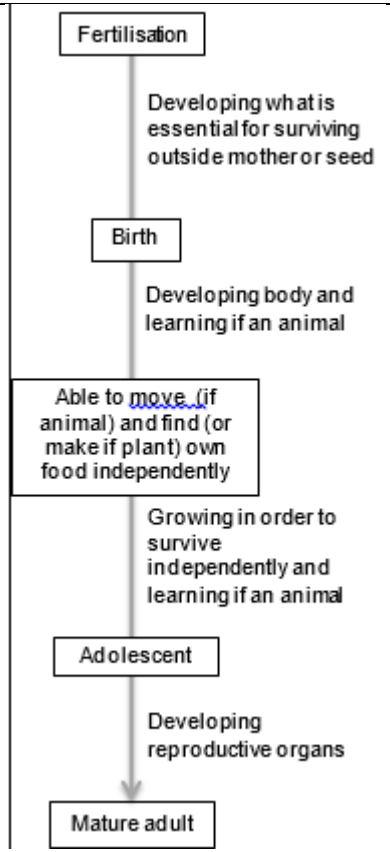
Chapter 3: Why are life cycles so different?

All living things have similar stages of life

trust in results, in oral and written forms such as displays and other presentations

In Year 5 &6, using evidence to describe how one thing affects another is key. Children should be taught how to describe patterns and give a ***judgement*** on how sure they are. Key features of this are:

- Recognise that conclusions may be uncertain due to difficulties controlling and measuring variables accurately.
- That measurement always introduces some error. Understand that repeating experiments helps to identify what the true value is and that data points far from the mean are likely to be inaccurate and should be discounted.
- Adapting experiments to produce more precise conclusions when the question requires it, especially when seeking to find maximum, minimum or specific values



Different animals have adapted these stages differently, which has enabled them to survive.

Connections / deepening understanding	**RADE**	**Assessment**
How is the understanding of this area deepened in other areas of the curriculum? What inks are there in the other subjects in the curriculum?	Are the rights of the child relevant in this area of study - do they get referred to in the work?	By the end of the unit the children will be able to … Details of the objectives that they will have covered within this unit of work

English – Report writing. Speaking and listening discussions. Note taking and research (Darwinian theories) History- Darwin and Lamark. Controversies over evolution versus creationism. Victorian England.		**Evolution** is the change of physical form in a population over a long-time span **Natural selection** is the process which controls that change.	In any **population** there is **variation** and **competition** for resources (food, water, mates). Within that variation, organisms that have features which make them better **adapted** at securing food, water, and mates, are more likely to survive and produce **offspring** which have **inherited** those same successful features. Those that are not well adapted will eventually go **extinct**	Over a long enough timeline all organisms in a population will have those successful features. This is known as the *Theory of Evolution by Natural Selection* and was developed by **Charles Darwin** in 1859

Assessment recording for the unit - checking the level of pitch of the work

Key skill(s)/ knowledge to be assessed by the end of the unit	**Lower attaining**	**Middle attaining**	**Higher attaining**
Evolution is the change of physical form in a population over a long-time span **Natural selection** is the process which controls that change. In any **population** there is **variation** and **competition** for resources (food, water, mates). Within that variation, organisms that have features which make them better **adapted** at securing food, water, and mates, are more likely to survive and produce **offspring** which have **inherited** those same successful features. Those that are not well adapted will eventually go **extinct.** Over a long enough timeline all organisms in a population will have those successful features. This is known as the *Theory of Evolution by Natural Selection* and was developed by **Charles Darwin** in 1859	Animals and plants change their form but this takes millions of years. A population of animals will compete for water, food and mates. Children begin to recognise why some adaptations (such as moth colour or bird beak types) are successful inherited features. Over very long periods of time, plants and animals with the most successful features survive.	Animals and plants change their form but this takes millions of years. This is a process called natural selection. A population of animals will compete for water, food and mates. Children recognise why adaptations (such as moth colour, bird beak types and giraffe neck length) are successful inherited features. They are able to describe why some features were successful over others. Over very long periods of time, plants and animals with the most successful features survive. This is known as 'The Theory of Evolution by Natural Selection' and was developed by **Charles Darwin** in 1859	Animals and plants change their form but this takes millions of years. These changes are passed on from generation to generation. Children can describe that they don't happen in one life time and take many, many generations to appear. This is a process called natural selection. A population of animals will compete for water, food and mates. Children are able to discuss that within that variation, organisms that have features which make them better **adapted** at securing food, water, and mates, are more likely to survive and produce **offspring** which have **inherited** those same successful features. (such as moth colour, bird beak types and giraffe neck length) are successful inherited features. They are able to describe why some features were successful over others and apply this to evolutionary diagrams over other organisms (e.g. elephants.) Over very long periods of time, plants and animals with the most successful features survive. This is known as

			'The Theory of Evolution by Natural Selection' and was developed by **Charles Darwin** in 1859

NB: The assessments are completed for two reasons – to enable the class teacher and in turn the subject leader to evaluate the pitch of the learning within the unit in order to consider any necessary updates and for the class teacher to report to parents on the attainment of pupils in the end of year reports.