Science | WPC | 2021-22 | Evolution and Inheritance

1. Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago
2. Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents
3. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution

	Assessment guidance	Key learning	Key vocabulary
Evolution and inheritance	Shows understanding of a concept using scientific vocabulary correctly	All living things have offspring of the same kind, as features in the offspring are inherited from the parents. Due to sexual reproduction, the offspring are not identical to their parents and vary from each other. Plants and animals have characteristics that make them suited (adapted) to their environment. If the environment changes rapidly some variations of a species may not suit the new environment and will die. If the environment changes slowly, animals and plants with variations that are best suited survive in greater numbers to reproduce and pass their characteristics on to their young. Over time these inherited characteristics become more dominant within the population. Over a very long period of time these characteristics may be so different to how they were originally that a new species is created. This is evolution. Fossils give us evidence of what lived on the Earth millions of year ago and provide evidence to support the theory of evolution. More recently scientists such as Darwin and Wallace observed how living things adapt to different environments to become distinct varieties with their own characteristics.	Offspring Sexual reproduction Vary Characteristics Suited Adapted Environment Inherited Species Fossils
	Applying knowledge in familiar related contexts, including a range of enquiries	Design a new plant or animal to live in a particular habitat Use models to demonstrate evolution e.g. Darwin's finches bird beak activity Use secondary sources to find out about how the population of peppered moths changed during the industrial revolution Make observations of fossils to identify living things that lived on Earth millions of years ago Identify features in animals and plants that are passed on to offspring Explore this process by considering the artificial breeding of animals or plants e.g. dogs Compare the ideas of Charles Darwin and Alfred Wallace on evolution Research the work of Mary Anning and how this provided evidence of evolution	

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Lesson Progression	
1	Timeline of life on Earth from single-cell organisms to modern-day humans – to understand how life has adapted since it began and that humans have only been around for a relatively short period of time.
2	Recap how fossils are formed and to learn about their importance in studying how species have adapted over time. Know about the life and work of Mary Anning and the significance of her work in advancing this field of science.
3	Understand the fossil evidence for evolution – apply understanding to analyse fossils against their modern-day counterpart, identifying similarities and differences and the reason adaptations may have given an advantage.
4	
5	Know 'trait' means an observable characteristic and 'inheritance' is a trait passed from parent to offspring. Know that environmental factors are not inherited and give examples (e.g. scar, tattoo, hair length). Apply concept of inheritance to give desired traits in offspring.
6	Understand how animals and plants have adapted to suit their environment and that these adaptations have been passed from parent to offspring via inheritance.
7	Know about the work of Charles Darwin and his Theory of Evolution.
8	