Science Progression of Knowledge	**Year 6**	**Topic**: Evolution and Inheritance	
National Curriculum Objectives:	**Essential Vocabulary:**	**Substantive Knowledge:** - children MUST know this by the end of the unit	**Working Scientifically Objectives:**
• 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	• **Evolution** and **inheritance:** evolve, **adaptation,** inherit, **natural selection, adaptive traits, inherited traits,** mutations, theory of evolution, ancestors, biological parent, chromosomes, genes, Charles Darwin. • Other: selective breeding, artificial selection, breed, cross breeding, genetically modified food, cloning, DNA. Previously introduced vocabulary: classification, **offspring, characteristics, habitat, environment,** adapt, **variations**, human, **fossil,** suited, cells, names of different habitats, names of animals and their body parts, species, **sedimentary rock**, lava, **igneous rock**, **metamorphic rock**, **magma**, heat, **fossilisation**.	• Fossils provide evidence that Living things have changed over time. • Environmental change can affect how well an organism is suited to its environment. • Over time the characteristics that are most suited to the environment become increasingly common. • Some organisms reproduce sexually where offspring inherit information from both parents. • Some organisms reproduce asexually by making a copy of a single parent • Different types of organism have different life cycles. • Life cycles have evolved to help organisms survive to adulthood.	• Identify features I have inherited from my parents and note variations. • Arrange ourselves in different ways according to our inherited characteristics. • Carry out my own research to find animals that live in a particular environment around the world, recording the features that make it advantageous for its habitat. • Compare and contrast the features of two animals living in the same environment, explaining why each of their features are advantageous for that particular species. • Understand that scientists are always refining, changing and developing the ideas of other scientists, and that ideas can be refuted when further evidence is uncovered. • Ask questions about evolution and use my own research to find the answers, presenting my findings. • Create a fact file about Charles Darwin, using known facts and my own research. • Read statements and write persuasive arguments to show whether I agree or disagree, drawing on my knowledge of evolution and inheritance.

Prior Knowledge:	**Future Knowledge:**	**Working at Greater depth:**	**Science Enquiry/Key Questions:**
From Key Stages 1 & 2, children should: • Understand there is a variety of life on Earth • Know that some animal's differences are important to their survival • Know how animals and plants reproduce • Know how fossils form over time	**In Key Stage 3 children will learn about:** • Heredity as the process by which genetic information is transmitted from one generation to the next • The variation between individuals within a species being continuous or discontinuous, to include measurement and graphical representation of variation • 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.	● Can they research and discuss the work of famous scientists, such as Charles Darwin, Mary Anning or Alfred Wallace? ● Can they explain how some living things adapt to survive in extreme conditions?	• What is the most common eye colour in our class? • Is there a pattern between the size and shape of a bird's beak and the food it will eat? • What is variation, and why is it important? • How did life begin on Earth? • How do we change? • What is evolution? • What evidence is there for evolution? • How does evolution happen? • What reasons do animals become extinct? • Polar Bears' habitat is rapidly changing, what possible futures do they face, and can we predict which is most likely? • How did Darwin come up with the theory? • Why was Darwin's theory not initially accepted? •How has the skeleton of the horse changed over time?