Science Knowledge and Skills Overview – Year Three Rocks

National Curriculum Objectives	Sticky Knowledge	Prior and Future Learning
• Pupils should be taught to compare and group together different type of rocks on the basis of their appearance and simple physical properties • Describe in simple terms, how fossils are formed when things that have lived are trapped within rock. • Recognise that soils are made from rocks and organic matter.	• Rocks have been used by humans for millions of year, from early tools and weapons through to various construction materials. • Sediment deposited over time, often as layers at the bottom of lakes and oceans, forms sedimentary rocks (e.g. coal, chalk, flint). • Extreme pressure and heat over time forms metamorphic rocks (e.g.marble and slate). • When magma cools and solidifies, it forms metamorphic rocks (e.g. granite and pumice). • Soil consists of a mix of organic materials, decayed plants and animals and broken bits of rocks and minerals. • Crystals are a special kind of solid materials, where the particle structure is made of a uniform, repeating pattern. • Crystals are sometimes formed within rocks. • A fossil is the preserved remains or traces of a dead organism which were trapped within rock.	<u>In Year 2 Children should:</u> • Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • Find out how shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. NB: Children may have a basic understanding of soil, fossils and rocks from EYFS. <u>In Year 4 children will:</u> • Compare and group materials together, according to whether they are solids, liquids or gases. • Observe that some materials change state when heated or cooled, and measure and research the temperature at which this happens in degrees Celsius. • Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. <u>In Year 6 children will:</u> • Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.
Links to NHFS core curriculum themes	**Key Questions**	**Vocabulary**
Sustainability – fossil fuels, mining **Aspirations** – e.g. Archaeology, geology, soil science/agriculture **Equality** – mining exploitation, New Hartley Pit Disaster	How are the soils different? Which do you think has the best drainage? Which is more likely to lead to flooding? How many soil types have we found? How might the soil be different in different countries? What rock is best for a kitchen chopping board? What types of rocks are there? How do rocks change? What would grow best in your soil? Why do you think worms are important to the creation of soil? How can we use composting to make our own soil? How are fossils created? Why do fossils help us find out about historical events?	Fossil, soil, crystals, sedimentary, metamorphic, igneous, preserved, organism, magma, sediment, organic matter
Key Scientists	**Big Question**	
Mary Anning (Paleontologist) Florence Bascom (Geologist)	What can rocks and soils tell us?	

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How does adding different amounts of sand to soil affect how quickly water drains through it? Which soil absorbs the most water? 	Can you use the identification key to find out the name of each of the rocks? 	What happens when water keeps dripping on a sandcastle? 	Is there a pattern in where we find volcanoes on planet Earth? 	Who was Mary Anning and what did she discover?