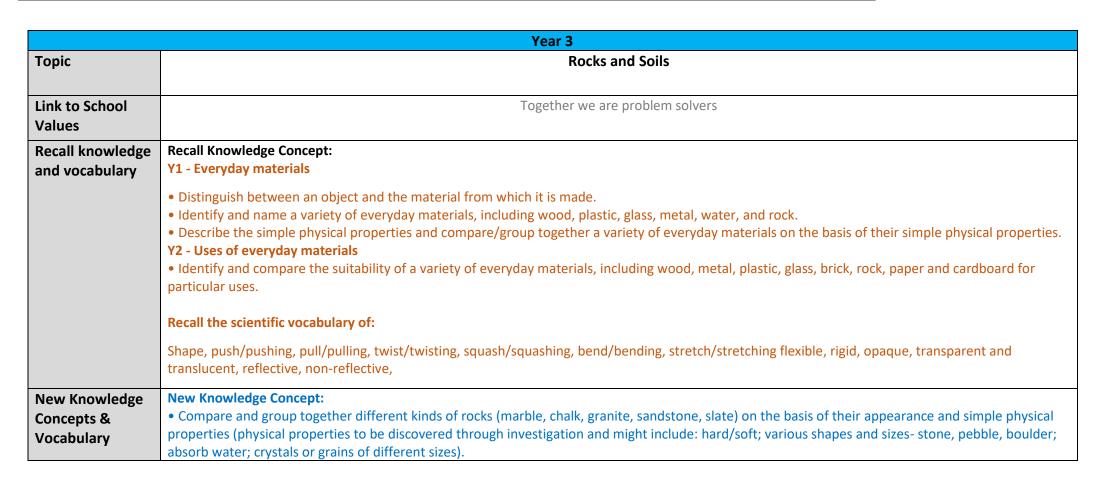
Science- Whole School Overview (Chemistry Topics)

In science we build upon the learning in KS1 and by the end of year 6 we aim for all pupils to have studied a broad and progressive science curriculum, which provides the foundations for understanding the world. We focus on a range of key concepts, skills, knowledge & vocabulary, which ensures pupils have the necessary understanding to embrace the KS3 curriculum. We endeavour for pupils to develop rational explanation, a sense of excitement and curiosity about natural phenomena, to understand how science can explain what is occurring, predict how things behave and analyse causes.





 Describe in simple terms how fossils are formed when things that have lived are trapped within rock (Fossils form millions of years ago. Plants and animals died and fall to the seabed. They become covered and squashed by other material. Over time the dissolving animal and plant matter is replaced by minerals from the water). Recognise (through practical investigation) that soils are made from rocks (some ground down, some small pieces, some larger pieces) and organic matter – these differ from soil to soil.
Use the scientific vocabulary of: Rock, marble, chalk, granite, sandstone, slate, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil

Year 4	
Торіс	States of Matter
Link to School	Together we are safe (due to heating and cooling)
Values	
Recall knowledge	Recall Knowledge Concept:
and vocabulary	 Y3 – Rocks and Soils group and identify materials including rocks in different ways according to their properties, based on first-hand observation;
	Recall the scientific vocabulary of: Rock, marble, chalk, granite, sandstone, slate, stone, pebble, boulder, grain, crystals, layers, hard, soft, texture, absorb water, soil, fossil
Communicating scientifically: New Knowledge	 New Knowledge Concept: compare and group materials together, according to whether they are solids (including grains and powders), liquids (including thick liquids such as conditioner or treacle) or gases (including visible gas such as bubbles in a carbonated drink)
Concepts & Vocabulary	 observe that some materials (water, chocolate and steel) change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C) identify (through observation and investigation) the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.
	Use the scientific vocabulary of: States of Matter, solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle

Торіс	Properties and Changes of Materials
Recall knowledge	Recall Knowledge Concept:
and vocabulary	Y3 - Forces and magnets (physics)
	• Compare and group everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.
	Y4 - States of matter/electricity (physics)
	• describe the characteristics of different states of matter and group materials on this basis; and describe how materials change state at different
	temperatures, using this to explain everyday phenomena, including the water cycle
	 Recognise some common heat conductors and heat insulators, and associate metals with being good conductors.
	Recall the scientific vocabulary of:
	States of Matter, solid, liquid, gas, state change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle, Force, contact
	force, non-contact force, magnetic force, magnet, conductor, insulator Thermal/electrical insulator/conductor, change of state
New Knowledge	New Knowledge Concept:
Concepts &	• Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity
Vocabulary	 (electrical and thermal), and response to magnets. Know that some materials (sugar, salt) will dissolve in liquid to form a solution and describe how to recover a substance from a solution having
	 Know that some materials (sugar, salt) will dissolve in liquid to form a solution and describe how to recover a substance from a solution having taken part in practical investigation (evaporate the water).
	 Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.
	 Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and
	plastic.
	 Demonstrate, through practical enquiry, that dissolving, mixing and changes of state are reversible changes.
	 Explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes
	associated with burning, rusting, the action of acid on bicarbonate of soda and the process of making bread.
	Use the scientific vocabulary of:
	mixture, dissolve, solution, soluble, insoluble, filter, sieve, reversible/non-reversible change, burning, rusting, new material