MATERIALS (CHEMISTRY)

Statements in *red* are linked from other topics

Progression in Scientific knowledge, concepts & skills	EYFS (Early Learning Goals)	Year 1	Year 2	Year 3	Year 4 (States of Matter)	Year 5	Year 6	KS3
Concepts Structure Function Cause and effect Similarity and Difference Working Scientifically	Children know about similarities and difference in relation to places, objects, materials and living things. Children talk about features of their own immediate environment and how environments might vary from one another	Identify and name a variety of everyday materials (wood, plastic, glass, metal, water and rock) Distinguish between an object and the materials from which it is made Describe physical properties of everyday materials	Know the uses of different everyday materials (wood, metal, plastic, glass, rock, brick, paper, cardboard) Classify and group materials based on their suitability for particular uses Find out how solid objects can be changed by	*Compare and group together different kinds 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 (Rocks)*	Compare and group materials according to whether they are solids, liquids or gases Know that some materials change state (heating and cooling; no baking) Identify the part played by evaporation and condensation	Compare and group everyday materials based on their properties including their hardness, solubility, transparency, conductivity (*electrical and thermal*) and response to magnets Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution		Chemical reactions as the rearrangement of atoms Representing chemical reactions using formulae and using equations Combustion, thermal decomposition, oxidation and displacement reactions Defining acids and alkalis in terms of neutralisation reactions

	Children make observations of animals and plants and explain why some things occur and talk about changes	Compare and group together everyday materials on the basis of their simple physical properties	squashing, bending, twisting and stretching	*Notice that some forces need contact between two objects, but magnetic forces can act at a distance (Forces and Magnets)*	in the water cycle	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 that dissolving, mixing and changes of state are reversible changes Explain that some changes		The pH scale for measuring acidity/alkalinity; and indicators.

						result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda		
Possible Learning Challenge Questions		Which materials should the Three Little Pigs have used to build their house?	What is our school made from? Can materials be changed?		How would we survive without water?	Is it gone forever?		