Progression of knowledge, vocabulary, skills and suggested assessment outcomes in Chemistry

	Key knowledge progression to be explicitly taught throughout unit of work (and revised constantly through retrieval practice)	Key vocabulary All vocabulary on Crown Planners (to be explicitly taught)	Key skills progression	Assessment outcome
	EYFS – A foundation of scientific skills and knowledge Pupils should be taught to • Ask questions • Talk about what they see using a wide vocabulary • Use talk to help work out problems and organise thinking and activities • To explain how things work and why they might happen • Articulate their ideas and thoughts in well-formed sentences • Use new vocabulary in different contexts (linked to the vocabulary on the Year One crown planners) • Explore collections of materials with similar and/or different properties • Talk about the differences between materials and the changes they notice • Use all of their senses in hands on exploration of natural materials			
MATERIALS	YEAR ONE – Everyday Materials Pupils should be taught to: • distinguish between an object and the material from which it is made • identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock • describe the simple physical properties of a variety of everyday materials • compare and group together a variety of everyday materials on the basis of their simple physical properties	YEAR ONE Fabric (noun) Smooth (adjective) Rough (adjective) Bendy (adjective) Flexible (adjective) Plastic (noun) Absorbent (adjective) Waterproof (adjective)	YEAR ONE • I know and can name wood, plastic, glass, metal, water and rock. • I know and can describe the properties of everyday materials. • I know and can explain the materials that an object is made from. • I know how to group objects based on the materials they are made from. • I know how to distinguish between an object and the material it is made from.	YEAR ONE

	YEAR TWO – Uses of Everyday Materials Pupils should be taught to: • 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 the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	YEAR TWO Absorbent (adjective) Property (noun) Twist (verb) Stretch (verb) Suitable (adjective) Unsuitable (adjective) Reflective (adjective) Opaque (adjective) Translucent (adjective) Transparent (adjective)	YEAR TWO • I know how to identify and name a range of materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard. • I know and can explore how shapes can be changed by squashing, bending, twisting and stretching. • I know how to suggest why a material might or might not be used for a specific job.	YEAR TWO

	YEAR THREE - Rocks Pupils should be taught to: • 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 • recognise that soils are made from rocks and organic matter.	YEAR THREE Metamorphic (adjective) Igneous (adjective) Sedimentary (adjective) Fossil (noun) Soil (noun) Crystal (noun) Organic matter (noun) Absorbent (adjective)	YEAR THREE • I know and can describe how fossils are formed. • I know and can describe how soil is made. • I know and can compare and group rocks based on their appearance and physical properties, giving a reason. • I know and can describe and explain the difference between sedimentary and igneous rock.	YEAR THREE
	YEAR FOUR – States of Matter Pupils should be taught to: • compare and group materials together, according to whether they are solids, liquids or gases • identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature	YEAR FOUR Solidify (verb) Evaporate (verb) Condense (verb) Water cycle (noun) Precipitation (noun) Reversible (adjective) Celsius (adjective/noun) Molten (adjective)	YEAR FOUR • I can group materials based on their state of matter (solid, liquid, gas). • I can explore and describe how some materials can change state. • I can measure the temperature at which materials change state. • I can describe the water cycle. • I can explain the part played by evaporation and condensation in the water cycle.	YEAR FOUR

	YEAR FIVE – Properties and Changes Pupils should be taught to: • compare and group together everyday materials on the basis of 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 • 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 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.	YEAR FIVE Solubility (noun) Filtering (verb) Evaporation (verb) Condensation (verb) Separation (noun) Magnetism (noun) Conductor (noun) Thermal Insulator (noun) Chemical (noun) Quantitative (adjective)	YEAR FIVE • I can give evidenced reasons why materials should be used for specific purposes. • I can describe how a material dissolves to form a solution; explaining the process of dissolving. • I can describe and show how to recover a substance from a solution. • I can explain how some changes result in the formation of a new material and that this is usually irreversible. • I know and can demonstrate that some changes are reversible and some are not. • I can describe how some materials can be separated. • I can demonstrate how materials can be separated (e.g. Through filtering, sieving and evaporating). • I can discuss reversible and irreversible changes. • I can compare and group materials based on their properties (e.g. hardness, solubility, transparency, conductivity, [electrical & thermal], and response to magnets).	YEAR FIVE

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