Curriculum Rationale and Overview

Subject: Chemistry **Year group: 8**

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
National Curriculum context	The principles underpinning the Mendeleev periodic table. The periodic table: periods and groups; metals and non-metals. How patterns in reactions can be predicted with reference to the periodic table. The properties of metals and non-metals.	<u>Earth Chemistry</u> The composition of the Earth. The formation of igneous, sedimentary and metamorphic rocks Earth as a source of limited resources and the efficacy of recycling The composition of the atmosphere The production of carbon dioxide by human activity and the impact on climate <u>Metals and acids</u> Reactions of acids with metals to produce a salt plus hydrogen Combustion, thermal decomposition, oxidation and displacement reactions The order of metals and carbon in the reactivity series The use of carbon in obtaining metals from metal oxides Properties of ceramics, polymers and composites (qualitative).	Biology and Physics taught in this term.	Biology taught in this term.	The concept of a pure substance Mixtures, including dissolving Diffusion in terms of the particle model Simple techniques for separating mixtures: filtration, evaporation, distillation and chromatography The identification of pure substances	Biology and Physics taught in this term.

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Scheme of Learning Title:	Atomic structure and Periodic table: Periodic table	Chemistry of the atmosphere: Earth Chemistry Chemical Changes: Metals and Acids			Atomic Structure and Periodic Table: Separation techniques	
Content *What will students know?*	How the periodic table is organised. The classification of elements based on their position in the periodic table. Use data to predict the properties of other elements in the periodic table	<u>Earth Chemistry</u> The structure of the Earth at different depths. The changes to the surface of the Earth. The formation of different substances found in the Earth. How the process of convection causes movement in the Earth. <u>Metals and Acids</u> Explain how metals and acids react together. Describe the reactivity of different materials. Write word and formula equations for the reactions between metals and acids.			How particles are arranged in a pure and impure substance. Explain what happens to a substance when it dissolves. How to separate mixtures to get pure substances.	
What will students understand?	Elements are ordered in groups with similar physical and chemical properties.	<u>Earth Chemistry</u> The differences between sedimentary, igneous and metamorphic rock. The layers of the Earth and their states. The Earth's atmosphere and the percentage abundance. <u>Metals and Acids</u> The signs of a reaction occurring. List metals in order of reactivity by observations			Pure substances contain only one type of atom. Impure is a mixture. Mixtures are easy to separate as they are not chemically bonded. Different techniques can be used to separate different mixtures due to their properties.	

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		That equations must be balanced to fully describe a reaction.				
What will students be able to do?	Predict the properties of elements based on their position in the periodic table. Construct word equations for group 1 metals and water.	Label the Earth's layers. Explain human impact on CO2 emissions. Perform a simple test of reactions between metals and acids and order these in order of reactivity.			Carry out separation techniques such as evaporation, distillation, filtration and chromatography. Draw particle diagrams to represent pure/impure substances and mixtures/compounds.	
How will they be formally assessed?	End of topic test: State the reactivity of the different groups in the periodic table.	End of topic test: Chemistry of the Atmosphere: Explain the changes to the composition of the atmosphere over time. Chemical Changes: Know the products of reactions between metals and acids.			End of topic test: Describe the different ways to separate mixtures.	