



Curriculum Map



Subject: Science - CHEMISTRY

Year group: Year 10

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Content <i>Declarative Knowledge – ‘Know What’</i>	Chem 1: Modelling atoms. Development of atomic model. Carbon dating and existence of isotopes. Patterns of reactivity. Transition metal properties.	Chem 2: Particles model of state change. How bonding affects properties. The different types of bonding. Properties of metals, alloys, diamonds, graphite and nanoparticles.	Chem 3: Testing for ions Testing for unknown substances	Chem 4: Reactivity to predict displacement reactions. How we extract metals using different techniques. Oxidation and reduction reactions.	Chem 5: The reactions of acids with bases. Difference between strong and weak acids.	Electrolysis of compounds
Skills <i>Procedural Knowledge – ‘Know How’</i>	Chem 1: Use of standard form and estimates. Balance symbol equations. How to separate mixtures.	Chem 2: Work with orders of magnitude. Visualise and represent 2D and 3D shapes. Represent different bonding.	Chem 3 How to identify unknown substances with various chemical tests	Chem 4: How to write ionic half equations. How an elements position on the reactivity series affects the reactivity of the element The importance of hydrogen and carbon in predicting reactivity.	Using titration to find reacting volumes of acid and alkali. The ions found in acids and bases. How the ions react in a neutralisation reaction.	The products of electrolysis of: Molten compounds Compounds in solution Aluminium oxide
Key Questions	How did new evidence change our understanding of matter? How can we predict the reactivity and properties of different elements and substances?	How do elements form bonds with each other, how does this affect their properties? What happens to effect and during changes of state?	What is found in the unknown compound? How do you know that this element is in the compound? What evidence can you share to prove the substance is in the compound?	How do we extract different metals? Why we need to extract metals? Why are some metals found in the Earth’s crust in their pure form?	What is the difference between strong and weak acids? Concentrated and dilute acids? What ions are found in acids and alkalis? What are the steps for carrying out a titration?	Why do substances need to be in a molten form or in solution to be electrolysed? What happens to the electrodes in electrolysis? Why we need to use electrolysis to produce pure metals?
Assessment	Diagnostic assessment	Summative assessment	Diagnostic assessment	Summative assessment	Diagnostic assessment	PPE’s



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Literacy / Numeracy / SMSC / Character	Use of standard form. Chemical equations. Scientific method, peer review and building on the work of others.	Working with orders of magnitude – converting large and small values.	Explaining which elements are found in different compounds. Justifying results with evidence	Orders of magnitude calculations. Writing balanced equations.	Half equations. Writing a method to produce copper sulphate Calculating the concentration of substances	Making predictions. Justifying why different substances will be produced.
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