

Year 10 Curriculum Overview [2022-2023]
Subject – Separate Science Chemistry

Autumn Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
HT1	C1 States of matter C2 Methods of separation and purifying substances	<ul style="list-style-type: none"> States of matter (review) Mixtures Filtration Crystallisation Paper Chromatography Distillation Drinking water 	<ul style="list-style-type: none"> KS3 Review 	<ul style="list-style-type: none"> Devise an experiment Compare and contrast 	<ul style="list-style-type: none"> Crystallographer 	
	C3-4 Atomic structure and the Periodic table	<ul style="list-style-type: none"> Atom Isotopes Elements Electronic configuration 	<ul style="list-style-type: none"> Atomic structure Elements Periodic table Mendeleev 	<ul style="list-style-type: none"> Timeline of the history of the periodic table and atomic structure. 	<ul style="list-style-type: none"> Inorganic chemist Speciation chemist 	
	C5 Ionic Bonding	<ul style="list-style-type: none"> Ionic bonds Ionic lattices Properties of ionic compounds 	<ul style="list-style-type: none"> C4 Electronic configurations and Ions C3 Isotopes 	<ul style="list-style-type: none"> Presenting ionic models and discussing limitations 	<ul style="list-style-type: none"> Academic researcher Analytical chemist 	
HT2	C6-C7 Covalent bonding and types of substance	<ul style="list-style-type: none"> Covalent Bonds Molecular compounds Allotropes of carbon Properties of metals Bonding models 	<ul style="list-style-type: none"> C5 Ionic Bonding C4 Mendeleev KS3 Atoms, elements and Compounds 	<ul style="list-style-type: none"> Compare and Contrast allotropes of Carbon Research – C60 discovery 	<ul style="list-style-type: none"> Metallurgist Research into Graphene at Manchester University 	Assessment point 1 Topics C1-C5

	C8 Acids and Alkalis	<ul style="list-style-type: none">• Acids, Alkalis and Indicators,• Strong and Weak acids• Bases and Salts,• Making Copper Sulphate Salt• Alkalis and Balancing Equations• Investigating Neutralisation• Reactions of acids with metals• Reactions of acids with carbonates• Solubility.	<ul style="list-style-type: none">• KS3 Review Acids & Alkalis• Bonding models• Covalent bonding	Oral explanations - how to make a salt / investigating neutralisation.	<ul style="list-style-type: none">• Analytical Chemist• Laboratory Technician	
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Spring Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	Components [includes understanding of KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
HT3	C9 Calculations involving Masses	<ul style="list-style-type: none"> Masses and Empirical Formula Conservation of Mass Moles 	<ul style="list-style-type: none"> Percentage change Extracting Data from Periodic Table 	<ul style="list-style-type: none"> Key terminology – explicit instruction 	<ul style="list-style-type: none"> Chemical Technician Research Chemist 	
	C10 Electrolysis	<ul style="list-style-type: none"> Copper sulphate electrolysis Molten compounds Aqueous Compounds 	<ul style="list-style-type: none"> C5 Ionic compounds C8 Chemical Equations -Carbonates and Acids 	<ul style="list-style-type: none"> Evaluating method for core practical. 	<ul style="list-style-type: none"> Electrical Engineer 	
	C11-12 Obtaining and using metals, reversible reactions and equilibria	<ul style="list-style-type: none"> Obtaining metals Reactivity Ores REDOX Life cycle assessment and recycling 	<ul style="list-style-type: none"> The Reactivity series The Periodic table Reactivity of metals 	<ul style="list-style-type: none"> Collaboration – the future of recycling metals Evaluating methods of metal extraction. 	<ul style="list-style-type: none"> Mining Mineral extraction metallurgist 	<p>Assessment Point 2</p> <p>Class Teacher Assessment on last and current topic</p>
HT4	C13 Transition metals, alloys and corrosion	<ul style="list-style-type: none"> Transition metals Corrosion Electroplating Alloying Uses of metals and alloys 	<ul style="list-style-type: none"> Metals and their uses C10 Electrolysis The reactivity series 	<ul style="list-style-type: none"> Explanations of the properties of alloys, describing the method for electroplating 	<ul style="list-style-type: none"> Fabricator Welder Manufacturing Jewellery Electroplater 	
	C14 Quantitative Analysis	<ul style="list-style-type: none"> Yields and Atom Economy Concentrations Titrations Molar volume of gases 	<ul style="list-style-type: none"> Atomic mass Atomic number The mole Conservation of mass 	<ul style="list-style-type: none"> Describing the method for a titration. 	<ul style="list-style-type: none"> Analytical Chemist 	

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Summer Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
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HT5	Equilibrium and Fuel Cells	<ul style="list-style-type: none"> Fertilisers and the Haber process Factors affecting equilibrium Chemical cells and fuel cells 	<ul style="list-style-type: none"> C12 Equilibrium 	<ul style="list-style-type: none"> Key terminology – explicit instruction Interpret/collate to determine the direction of equilibrium shift 	<ul style="list-style-type: none"> Chemist Computational chemist Agronomy and agrochemicals 	
	EXAM PREPARATION PAPER 1					Assessment point 3 Mock Examination Chemistry Paper 1
HT6	C17 Groups in the periodic table	<ul style="list-style-type: none"> Group 1 Group 7 Halogen reactivity Group 0 	<ul style="list-style-type: none"> C3 Atomic structure C4 The periodic table C11 Reactivity Trends in Physical and chemical properties Formula 	<ul style="list-style-type: none"> Explanation of the trends in reactivity in Groups 1 and 7 	<ul style="list-style-type: none"> Chemical technician Research Chemist 	
	C18 Rates of reaction	<ul style="list-style-type: none"> Rates of reaction Factors affecting reaction rates Investigating reaction rates Catalysts and activation energy. 	<ul style="list-style-type: none"> Chemical properties and formula Practical Chemistry skills and evaluating experimental methods 	<ul style="list-style-type: none"> Evaluating experimental methods Key terminology 	<ul style="list-style-type: none"> Chemical technician Research Chemist 	