SUBJECT CURRICULUM OUTLINE

Yr10 CHEMISTRY

Term	Topic/Unit of work	Knowledge	Skills	Assessment
Summer term 2 Autumn Term 1	Structure and bonding	Atomic structure, using the periodic table, chemical formula, charge and electrostatic forces, chemical and physical properties, states of matter, ionic, covalent and metallic bonding, trends in the periodic table, transition metals, alloys, nanoparticles, allotropes of carbon.	Practical skills: modelling structures, using Bunsen burners, measuring mass and volume using scientific equipment, simple reactions. Maths skills: interpreting data from graphs and tables, balancing equations, scale and size.	STAMP every 3 weeks in rotation with Biology and Physics End of topic test
	Energy changes (1-11)	Endothermic & exothermic reactions Energy profiles and activation energy Using bond energies Simple voltaic cells Hydrogen fuel cells	Practical skills: measuring temperature changes, accuracy & precision, repeatability Maths skills: graphing results, interpretation of results, calculation of changes in bond energies	End of topic test
Autumn Term 2	Quantitative chemistry (1- 13)	Chemical formula, using the periodic table, structure of the atom, chemical equations, reactants and products. Conservation of mass, mass during a ration, relative formula mass, moles (concentration and gases), concentration, uncertainty, excess,	Practical skills: Use of Bunsen burners, measuring mass and volume using scientific equipment Maths skills: balancing equations, calculating mass, Interpreting data from tables, converting units, Scientific modelling	End of topic test
Spring Term 1	Chemical changes (1-15)	Reactivity series Oxidation and reduction Reactions of acids with metals, alkalis, oxides, carbonates Required practical - making soluble salts pH scale & neutralisation	Practical skills: safely carry out simple reactions, making and using observations. Titrations - accuracy & precision	

		Strong & weak acids Titrations	Maths skills: calculations involving concentration, volume and moles - applying to practical results	
Spring Term 2	Chemical changes (16- 20)	Electrolysis and uses of electrolysis including required practical	Practical skills - electrolysis - carry out safely using electricity. Making and interpreting observations	End of topic test
	Rates (1-5)	RATES: Calculating rates of reactions, Understanding the factors which affect the rates of chemical reactions. Collision theory and activation energy. Catalysts. Reversible reactions and dynamic equilibrium.	RATES: Maths skills - decimal form, ratios, fractions and percentages, Make estimates, graph skills(plotting, gradients & tangents) Practical skills - investigating the factors that affect rate of reaction, use scientific theories and explanations to develop hypotheses, record observations and measurements	
Summer Term 1	Rates (6-15)	See Above	See Above	End of topic test
	Organic chemistry (1-3)	ORGANIC: Carbon compounds for fuels and feedstock's. Alkanes, alkenes, alcohols, carboxylic acids,	ORGANIC: Investigate the properties of hydrocarbons. Determine chemical formula and	

		Polymers (plastics and biological) - ester and peptide links	balance equations. Identify trends in properties of hydrocarbons.	
Summer Term 2	Organic (4-18)	See Above	See Above	MOCK CHEMISTRY UNIT 1 PAPER

Yr11

Autumn Term 1	Organic (finish)			
	Chemical analysis	CHEMICAL ANALYSIS: Purity, formulations and chromatography. Identification of common gasses	CHEMICAL ANALYSIS: Recognise and use expressions in decimal form. Use ratios, fractions and percentages. Make estimates of the results of simple calculations.	End of topic test
Autumn Term 2	Resources	USING RESOURCES: Using the Earth's resources, obtaining potable water and sustainable development. Life cycle assessments and recycling.	USING RESOURCES: LCAs should be done as a comparison of the impact on the environment of the stages in the life of a product, and only quantified where data is readily	Chemistry PAPER 1 MOCK

			available for energy, water, resources and wastes. Interpret LCAs of materials or products given appropriate information. Recognise and use expressions in decimal form. Use ratios, fractions and percentages. Make estimates of the results of simple calculations. Use an appropriate number of significant figures. Translate information between graphical and numeric form.	
Spring Term 1	Resources (finish) Revision	See above	See above	CHEMISTRY PAPER 2 MOCK
Spring Term 2	Revision	Detailed knowledge of the required practical's. The scientific concepts and processes they are based on. (see AQA specification for skills development)	- Data analysis / interpretation and explanations. - Exam technique - Key language/ vocabulary. - Numeracy skills	
Summer Term 1	Revision	Detailed knowledge of the required practical's. The scientific concepts and processes they are based on. (see AQA specification for skills development)	- Data analysis / interpretation and explanations. - Exam technique - Key language/ vocabulary.	

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			- Numeracy skills	
Summer Term 2	N/A			2x GCSE Chemistry External Exams