



St Joseph's College Subject Curriculum Map: CHEMISTRY

Curriculum Intent

The curriculum is designed to spiral in content, connecting smaller ideas to more abstract ideas. Students are then better prepared to apply these concepts when approaching an unfamiliar topic.

Big ideas are introduced in KS3 and then further explored in later years to help master scientific concepts.

Students are encouraged to analyse the world around them, explain phenomena, and make predictions.

There is constant development of knowledge and understanding in science driven by working scientifically.

Key aspects of the curriculum from KS3 to KS5 include: development of scientific thinking, experimental skills and strategies, analysis and evaluation skills.

Throughout the curriculum there is a high emphasis on scientific vocabulary, quantities, units, symbols and nomenclature.

	Year Group	Autumn Term		Spring Term		Summer Term	
		Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Key Stage 3	7	Practical Skills Atomic Structure Practical skills, modelling.	Acids and Alkalis Practical skills, lab safety, using indicators.	*Students are studying another Science subject	Science Week Careers in science (science week), practical skills.	Particles and their Behaviour Practical skills, using equipment, modelling.	End of Year Revision Drawing graphs, analysis, evaluation, methods of revision, planning.
	8	Practical Skills Chemical Reactions Lab safety, scientific questions, graphs, experimental analysis.	Mixtures The Earth Lab safety, planning, making predictions, analysis results, evaluating, modelling.	Periodic Table Practical skills, presentation skills, writing chemical equations.	Science Week Careers in science (science week), practical skills.	*Students are studying another Science subject	End of Year Revision Drawing graphs, analysis, evaluation, methods of revision, planning.
	9	*Students are studying another Science subject	Types of Substances Chemical calculations, types of chemical reactions, practical skills, following a method.	Testing Substances Practical skills, following a method, analysis of results, evaluation.	*Students are studying another Science subject	Energy Changes Chemical calculations, practical skills, analysis and evaluation, drawing graphs.	End of Year Revision Drawing graphs, analysis, evaluation, methods of revision, planning.
Key Stage 4	10	Atomic Structure Periodic Table Modelling, calculations.	Bonding and Properties, Metals Practical skills, modelling, analysis, identifying trends.	Acids, Bases and Salts, Chemical Calculations Lab safety, practical skills, evaluation, calculations.	Electrolysis, Chemical Calculations Making predictions, practical skills, calculations.	Energy in Reactions, Chemical Calculations Practical skills, experimental analysis, calculations.	Chemical Calculations, Hydrocarbons Calculations, diagrams.
	11	Organic chemistry, Rate of Reaction Equilibria Diagrams, practical skills, drawing graphs, analysis.	Hydrocarbons Chemistry of the Atmosphere Using resources Diagrams, careers in science, applying to the wider world.	Using Resources Chemical Analysis Practical skills, careers in chemistry, evaluating practicals.	End of Course Revision Planning and organisation, types of revision, numeracy, literacy.	End of Course Revision Planning and organisation, types of revision, numeracy, literacy.	Exams
Key Stage 5	12	Atomic structure Bonding Amount of Substance Modelling, testing	Periodic trends, Halogens, Group 2, REDOX and Acids Identifying patterns, predicting trends, chemical	Basic Organic Chemistry Alkanes Enthalpy Modelling, reaction	Alkenes, Alcohols, Equilibria Explaining trends, reaction mechanisms, modelling,	Haloalkanes Organic Synthesis and Analysis	End of Course Revision, Carbonyls, COOH and Derivatives

	<p>substances, shapes of molecules, practical skills, analysis, chemical calculations.</p>	<p>calculations, practical skills (titrations).</p>	<p>mechanisms, chemical calculations, naming organic molecules using IUPAC, practical skills (measuring enthalpy).</p>	<p>practical skills (e.g. distillation/reflux), chemical calculations.</p>	<p>Rate of Reaction Explaining trends, reaction mechanisms, analysing data, drawing, and interpreting graphs, chemical calculations, practical skills (measuring rate).</p>	<p>Exam technique, making links, structuring long answer questions, reaction mechanisms, practical skills.</p>
13	<p>Aromatic Chemistry Acids Bases and Buffers Carbonyls COOH and Derivatives Modelling, reaction mechanisms, chemical calculations, using graphs, practical skills (pH titration).</p>	<p>Amines, Amides and Amino Acids, Rate of Reaction, Enthalpy and Entropy Modelling, reaction mechanisms, shapes of molecules, chemical calculations.</p>	<p>Organic Analysis Electrochemical Cells Organic Synthesis Transition Metals and Complexes Analysing graphs, making predictions, reaction mechanisms, shapes of complexes, chemical calculations, practical skills (electrochemical cells).</p>	<p>End of Course Revision Exam technique, making links, structuring long answer questions, reaction mechanisms, practical skills.</p>	<p>End of Course Revision Exam technique, making links, structuring long answer questions, reaction mechanisms, practical skills.</p>	<p>Exams</p>