

CHEMISTRY

YEAR 9	Term 1	SC1: States of Matter. This topic explores the arrangement and energy within the particle model. SC2: Separation and Purifying Substances. This topic explores how to separate various mixtures based on their properties. SC3: Atomic Structure. This topic explores how the atom is build looking at sub-atomic particles.
	Term 2	SC4: The Periodic Table. This topic explores how the periodic table has developed over time. SC18: Rates of Reactions. This topic explores how by changing the environment surrounding a reaction can adjust the speed of the reaction.
	Term 3	SC21: Earth and Atmosphere. This topic explores how our atmosphere has changed over the last 4 billion years. C5-7: Types of Bonding. This topic explores how different compounds are bonded and the properties associated. SC17: Groups in the Periodic Table. This topic explores why specific elements have been grouped together.
	Term 4	Skills focus. This topic allows students to strengthen their ability to follow the scientific method. SC20: Fuels. This topic explores the role of fuels in our society. This includes separation, reactions and concerns.
	Term 5	SC9: Calculations Involving Masses. This topic explores how Chemists express amounts of atoms in compounds or in a reaction. SC15: Dynamic Equilibria. This topic explores the idea of reversible chemical reactions and how you can force the reaction in a specific direction.
YEAR 10	Term 1	SC8: Acids and Alkalis. This topic explores the behaviour between acids and alkalis. SC10: Electrolytic Processes. This topic explores how electricity can be used to plate one metal on another.
	Term 2	SC11: Obtaining and Using Metals. This topic explores how we extract metals and the Life Cycle of metals. Revision.
	Term 3	Skills Focus: This topic allows students to strengthen their ability to follow the scientific method. SC13: Transition Metals, Alloys and Corrosion. This topic explores why elements exist in the middle of the table based around reactions and behaviour. SC17: Groups in the Periodic Table. This topic explores why groups of elements are grouped together based on patterns.
	Term 4	Paper 1 Revision: Revisiting the content from year 9 in preparation for a paper 1 mock exam at the end of term.
	Term 5	SC18: Rates of Reaction: This topic explores how changing the environment of a reaction, you can adjust the speed at which a product is made. SC19: Heat Energy Changes in Chemical Reactions. This topic explores how energy moves during a chemical reaction. SC14: Quantitative Analysis. This topic explores how we calculate amounts of chemicals produced during different reactions.
YEAR 11	Term 1	SC20: Fuels. This topic explores the role of fuels in our society. This includes separation, reactions and concerns. SC21: Earth and Atmospheric Science. This topic explores how our atmosphere has changed over the last 4 billion years. SC22: Hydrocarbons. This topic introduces us to organic chemistry with structures and reactions of alkanes and alkenes.
	Term 2	SC23: Alcohols & Carboxylic Acids. This topic explores how alcohols are manufactured, used for fuels and used as a feedstock for making carboxylic acids. SC24: Polymers. This topic explores how polymers are made and the problems with them on the planet. SC25: Qualitative Analysis. This topic explores how we identify ions in samples using qualitative analysis. SC26: Properties of Matter. This topic explores various types of materials, their uses and their properties.
	Term 3	Race to the Line Revision: A series of lessons on each module where structured options are provided allowing a choice in the content and level of work. This allows flexibility in learning to ensure that the needs of all learners is being met. This provides the scaffolding and structured to develop knowledge, understanding and exam technique.
	Term 4	F.A.C.E Revision: A series of high impact lessons that give the final push toward exam preparation focusing on Facts, Application, Consolidation and Exam Techniques.

	Term 5	Final revision push providing more independence to student to allow focus on areas of most need and External End of Year Exams.
YEAR 12	Term 1	Elements of Life: This chapter explores the elements and compounds in the universe, the human body and in salt deposits. Some of the chemical ideas included in this module are: atomic structure, chemical equations and the mole, titrations, the periodic table, Group 2 chemistry, bonding and the shapes of molecules.
	Term 2	Developing Fuels: This chapter explores fuels, what they consist of, how energy involved in their combustion is measured and the contributions that chemists make to the development of better fuels. Some of the chemical ideas included in this module are: thermochemistry, catalysis, alkanes, alkenes, addition polymers, isomerism and dealing with polluting gases. Elements from the Sea: The extraction of halogens from minerals in the sea, together with a study of the properties and uses of these elements and their compounds. Some of the chemical ideas included in this module are: halogen chemistry, redox chemistry and equilibrium.
	Term 3	Elements from the Sea: The extraction of halogens from minerals in the sea, together with a study of the properties and uses of these elements and their compounds. Some of the chemical ideas included in this module are: halogen chemistry, redox chemistry and equilibrium. The Ozone Story: This chapter explores the important processes occurring in the ozone layer of the atmosphere. Some of the chemical ideas included in this module are: rates of reaction, radical reactions, intermolecular bonding, haloalkanes and the ozone layer.
	Term 4	What's in a medicine: This chapter explores medicines such as aspirin, leading to more functional group chemistry and methods of analysis. Some of the chemical ideas included in this module are: chemistry of the –OH group, carboxylic acids and esters, and analytical techniques (TLC, MS and IR).
	Term 5	Polymers and Life: This chapter explores condensation polymers, proteins and enzymes. DNA and its use in synthesising proteins. Some of the chemical ideas included in this module are: enzyme catalysis, amino acid and protein chemistry, proton and carbon-13 NMR and the structure and function of DNA and RNA.
	YEAR 13	Term 1
Term 2		Colour by Design: This chapter explores the origins of colour in biological pigments. It then moves on to studying synthetic dyes and food dyes. At this point a mock is exam is done to continue strengthening the students' exam technique. Colour by Design: This chapter explores dyes and the use of chemistry to provide colour to order. Some of the chemical ideas included in this module are: origins of colour in organic compounds, dyes, aromatic compounds, carbonyl compounds, and organic synthesis.
Term 3		Developing Metals: This chapter looks into the uses of metals through history and links this to transition metal chemistry. Oceans: This chapter explores the important role of carbon dioxide in oceans and how small changes can have big consequences.
Term 4		Oceans: This chapter explores the role of the oceans in dissolving substances and maintaining pH. Some of the chemical ideas included in this module are: enthalpy changes, entropy, acid–base equilibria, pH, and the 'greenhouse effect'. Revision: During this time students will continue to strengthen their subject knowledge and exam technique to prepare them for their final external exams.
Term 5		Final revision push and external exams.