

Year 10 Chemistry	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p>Periodic Table</p> <ul style="list-style-type: none"> Atoms and elements Chemical equations Separating mixtures History and structure of the atom Isotopes Electron structure Recap of Periodic table Metals Groups 1,7, and 0 Transition metals 	<p>Bonding</p> <ul style="list-style-type: none"> States of matter Atoms into ions Ionic bonding Giant ionic structures Covalent bonding Structure of simple molecules Giant covalent structures Fullerenes and graphene Giant metallic structures Nanoparticles and application 	<p>Identification</p> <ul style="list-style-type: none"> Pure substances and mixtures Chromatography RP Chromatography Identifying gases Test for positive ions Test for negative ions Instrumental analysis <p>Quantitative Chemistry</p> <ul style="list-style-type: none"> Relative mass and moles Equations and calculations Masses to balanced equations Percentage yield Atom economy 	<p>Sustainability</p> <ul style="list-style-type: none"> The Earth's atmosphere Greenhouse gases Global climate change Pollutants Potable water and treating wastewater HT Extracting metals Life cycle assessment Reducing the use of resources 	<p>Organic Chemistry</p> <ul style="list-style-type: none"> Crude oil, Hydrocarbons and Alkanes Fractional distillation Properties of hydrocarbons Cracking and Alkenes Reactions of Alkenes Structures of alcohols, Reactions and uses of alcohols Carboxylic acids and esters 	<p>Polymerisation</p> <ul style="list-style-type: none"> Addition polymerisation Condensation polymerisation Natural polymers DNA <p>Quantitative Chemistry</p> <ul style="list-style-type: none"> Concentration Titration and calculations Volume of gases
Working Scientifically Skills	<ul style="list-style-type: none"> safe use of a range of equipment to purify and/or separate chemical mixtures including evaporation, distillation 		<ul style="list-style-type: none"> safe use of a range of equipment to purify and/or separate chemical mixtures including chromatography safe use of appropriate heating devices and techniques including use of a Bunsen burner use of appropriate qualitative reagents and techniques to analyse and identify unknown samples or products including gas tests, flame test and precipitation reactions 	<ul style="list-style-type: none"> use of appropriate apparatus to make and record a range of measurements accurately including mass safe use of appropriate heating devices and techniques including use of a Bunsen burner and a water bath or electric heater use of appropriate apparatus and techniques for the measurement of pH in different situations 		<ul style="list-style-type: none"> use of appropriate apparatus to make and record a range of measurements accurately including volume of liquids use of appropriate qualitative reagents and techniques to analyse and identify unknown samples or products including the determination of concentrations of strong acids and strong alkalis
Core Practical			Chromatography Identifying ions	Purification of Water		Neutralisation using titration method
Independent Learning Link	Atomic Structure and the Periodic Table	Bonding and Matter	Quantitative Chemistry	The Atmosphere Sustainability	Organic Chemistry	Titrations

Year 11 Chemistry	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge	<p>Metals, Acids and Bases</p> <ul style="list-style-type: none"> Oxidation and reactivity series Displacement Extracting metals Redox OILRIG Acids and metals (Zn, Fe, Mg and Cu with H₂SO₄) Neutralisation and salt production Soluble salts with acids and insoluble base Strong and weak acids pH 	<p>Electrolysis</p> <ul style="list-style-type: none"> Electrolysis of molten ionic compounds Extracting metals Electrolysis of aqueous solutions RP Electrolysis HT Half equations 	<p>Energy Changes</p> <ul style="list-style-type: none"> Exothermic and Endothermic reactions RP Temperature change Reaction profiles (Energy level diagrams) HT Bond Energy calculations Chemical cells and batteries Fuel cells <p>Rates of Reaction</p> <ul style="list-style-type: none"> Collision theory Temperature and rate Concentration/ pressure and rate Surface area, catalyst and rate 	<p>Equilibria</p> <ul style="list-style-type: none"> Reversible reactions Dynamic equilibria Changing conditions on equilibrium Haber process Fertilisers in the lab and industry <ul style="list-style-type: none"> Rusting; Alloys Polymers, glass, ceramics and composites 	<p>Consolidation</p>	
Working Scientifically Skills	<ul style="list-style-type: none"> safe use of appropriate heating devices and techniques including the use of a Bunsen burner and water bath or electric heater safe use of a range of equipment to purify and/or separate a chemical mixture including evaporation, filtration and crystallisation safe use and careful handling of gases, liquids and solids, including careful mixing of reagents under controlled conditions, using appropriate apparatus to explore chemical changes and/or products 	<ul style="list-style-type: none"> use of appropriate apparatus and techniques for conducting and monitoring chemical reactions including appropriate reagents and/or techniques for the measurement of pH in different situations use of appropriate apparatus and techniques to draw, set up and use electrochemical cells for separation and production of elements and compounds 	<ul style="list-style-type: none"> use of appropriate apparatus to make and record a range of measurements accurately, including mass, temperature and volume of liquids making and recording appropriate observations during chemical reactions including changes in temperature making and recording appropriate observations during chemical reactions including the measurement of rates of reaction by a variety of methods such as production of gas and colour change 			
Core Practical	Making salts	Electrolysis	Temperature Change Rates of reaction			
Independent Learning Link	Reactions of Metals	Electrolysis	Exothermic and Endothermic reactions Rates of Reaction	Reversible Reactions	AQA Chemistry GCSE	AQA Chemistry GCSE