

	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
<b>Year 10 Chemistry &amp; Combined Science Chemistry</b>	<b>Content delivered:</b> <b>Unit 1 Atomic structure and the periodic table:</b> Atomic structure Elements Compounds Mixtures RAM Electronic structure Development of periodic table Metals and non-metals Groups 1, 7 & 0 Transition metals (Chemistry only)	<b>Content delivered:</b> <b>Unit 2 Bonding, structure and the properties of matter:</b> Ionic bonding Ionic compounds Covalent bonding Covalent compounds Metallic bonding States of matter Properties of different types of compounds	<b>Content delivered:</b> <b>Unit 2 Bonding, structure and the properties of matter:</b> Polymers Properties of metals and alloys Diamond, graphite and graphene Nanoparticles (Chemistry only) <b>Unit 3 Quantitative chemistry:</b> Moles Balancing equations Conservation of mass Limiting reactants Concentration of solutions Percentage yield (Chemistry only) Atom economy (Chemistry only) Using concentrations of solutions (Chemistry only)	<b>Content delivered:</b> <b>Unit 4 Chemical changes:</b> Metal oxides Reactivity series Redox reactions Metals and acids Neutralisation	<b>Content delivered:</b> <b>Unit 4 Chemical changes:</b> Soluble salts pH scale Titration Strong and weak acids Electrolysis <b>Unit 5 Energy changes:</b> Exothermic reactions Endothermic reactions Reaction profiles Energy change in reactions Cells and batteries (Chemistry only) Fuel cells (Chemistry only)	<b>Content delivered:</b> <b>Unit 6 Calculating rate and extent of chemical change:</b> Calculating rates of reaction Factors affecting rate of reaction Collision theory Catalysts Reversible reactions Equilibrium
<b>Key Words</b> <b>Level 2</b> <b>Level 3</b>	Nucleus, proton, neutron, electron, isotope, plum pudding model, nuclear model, Bohr model, mass number, proton/atomic number, group, period, property, reactivity, shell, metal, non-metal, ion, cation, anion, displacement	Ionic, covalent, metallic, delocalised, ion, lattice	Ionic, covalent, metallic, delocalised, ion, lattice, mole, relative formula/atomic mass, concentration	Neutralisation, oxidation, reduction, thermal decomposition, indicator, electrolysis, electrode, cathode, anode, electrolyte, cation, anion	Neutralisation, indicator, electrolysis, electrode, cathode, anode, electrolyte, cation, anion, exothermic, endothermic	Gradient, concentration, kinetic energy, collision, catalyst, reversible, equilibrium
<b>Where previous knowledge has occurred and future development</b> <b>KS2 → KS3 → KS4 → KS5</b>	KS2: Solids, liquids and gases KS3: Particle model KS4: KS5: s, p, d orbitals	KS2: Solids, liquids and gases KS3: Particle model KS4: KS5: s, p, d orbitals	KS2: Solids, liquids and gases KS3: The Periodic Table KS4: KS5: Mole calculations, Ideal Gas Law, titrations	KS2: Metals and non-metals KS3: Chemical and physical reactions KS4: KS5: Mole calculations, titrations	KS2: Dissolving solids in liquids KS3: Acids and alkalis KS4: KS5: Acids, bases and buffers	KS2: Graph drawing KS3: Digestion KS4: Tangent drawing and gradients KS5: Rates, order and rate equations
<b>Common Misconceptions</b>	Differences between proton number and mass number	That electrons are static	Where to place the 'balancing' number when balancing equations	Confusing oxidation and reduction	Lowest pH is 1	Confusing initial rate with rate at a set temperature
<b>Literacy</b>	Scientific writing (HSW): Separation techniques Writing to describe: Reactivity of group 1 and group 7 NHTW reviews as starter activities	Writing to describe: Formation of different bonds NHTW reviews as starter activities	Writing to describe: structure and properties of giant covalent molecules NHTW reviews as starter activities	Scientific writing (HSW): Testing reactivity NHTW reviews as starter activities	Scientific writing (HSW): Titration Scientific writing (HSW): Forming salts Scientific writing (HSW): Exo and endothermic reactions NHTW reviews as starter activities	Scientific writing (HSW): Rates of reaction NHTW reviews as starter activities
<b>Numeracy</b>	Calculating RAM	Negative numbers	Calculating percentages Rearranging equations	Balancing equations	Negative numbers	Choosing appropriate graphs Gradients from graphs Calculating means
<b>Homework</b>	Completion of kerboodle/everlearner section quizzes	Completion of kerboodle/everlearner section quizzes	Completion of kerboodle/everlearner section quizzes	Completion of kerboodle/everlearner section quizzes	Completion of kerboodle/everlearner section quizzes	Completion of kerboodle/everlearner section quizzes
<b>Assessment this half-term</b>	Unit 1 test	Unit 2 test with unit 1 included	Unit 3 test with units 1 & 2 included Mock exam – units 1&2	Unit 4 test with units 1-3 included	Unit 5 test with units 1-4 included	Unit 6 test with units 1-5 included Mock exam – paper 1
<b>Career opportunities</b> <b>Employment Links</b>	LIFE SKILLS: Understanding why different elements react EMPLOYMENT: Geochemist	LIFE SKILLS: Understanding why metals conduct electricity EMPLOYMENT: Railway engineer	LIFE SKILLS: Understanding why quantities of reactants in reactions is important EMPLOYMENT: Nanotechnologist	LIFE SKILLS: Understanding the uses of different metals EMPLOYMENT: Industrial chemist	LIFE SKILLS: Understanding the safety with strong acids/alkalis EMPLOYMENT: Ice core analyst	LIFE SKILLS: Understanding the speed of different reactions EMPLOYMENT: Analytical chemist
<b>Enrichment</b>						
<b>Practical activities/HSW</b>	Testing properties of metals and non-metals Separation techniques	Changing states Testing properties of compounds	Conservation of mass	Testing reactivity Acids and alkalis	Forming salts Titration Electrolysis Exothermic reactions Endothermic reactions	Concentration and rates Temperature and rates SA and rates Reversible reactions
<b>Employability Skills</b>	<b>Aiming high</b> Creativity Leadership Listening Presenting <b>Problem solving</b> Staying positive Literacy <b>Numeracy</b> Independence <b>Communication</b> Teamwork	<b>Aiming high</b> Creativity Leadership Listening Presenting <b>Problem solving</b> Staying positive Literacy <b>Numeracy</b> Independence <b>Communication</b> Teamwork	<b>Aiming high</b> Creativity Leadership <b>Listening</b> Presenting <b>Problem solving</b> Staying positive Literacy <b>Numeracy</b> Independence <b>Communication</b> Teamwork	<b>Aiming high</b> Creativity Leadership Listening Presenting <b>Problem solving</b> Staying positive Literacy <b>Numeracy</b> Independence <b>Communication</b> Teamwork	<b>Aiming high</b> Creativity Leadership <b>Listening</b> Presenting <b>Problem solving</b> Staying positive Literacy <b>Numeracy</b> Independence <b>Communication</b> Teamwork	<b>Aiming high</b> Creativity Leadership Listening <b>Presenting</b> <b>Problem solving</b> Staying positive Literacy <b>Numeracy</b> Independence <b>Communication</b> Teamwork
<b>IT Skills</b>	IT1 & IT2: Appropriate websites and research for homework as well as recall quizzes	IT1 & IT2: Appropriate websites and research for homework as well as recall quizzes	IT1 & IT2: Appropriate websites and research for homework as well as recall quizzes	IT1 & IT2: Appropriate websites and research for homework as well as recall quizzes	IT1 & IT2: Appropriate websites and research for homework as well as recall quizzes	IT1 & IT2: Appropriate websites and research for homework as well as recall quizzes
<b>Notes/developments /standardisation comments</b>						

