	Half term 1	Half term 2	Half term 3	Half term 4	Half term 5	Half term 6
Year 10 Chemistry & Combined Science Chemistry	Content delivered: Unit 1 Atomic structure and the periodic table: Atomic structure Electronic structure Development of periodic table Metals and non-metals Groups 1, 7 & 0 Transition metals (Chemistry only) Unit 2 Bonding, structure and the properties of matter: Ionic bonding Ionic compounds Covalent bonding Covalent compounds Metallic bonding Properties of different types of compounds	Content delivered: Unit 2 Bonding, structure and the properties of matter: States of matter Polymers Properties of metals and alloys Diamond, graphite and graphene Nanoparticles (Chemistry only) Unit 3 Quantitative chemistry: Relative formula mass Percentage by mass Balancing equations Conservation of mass	Content delivered: Unit 3 Quantitative chemistry: Moles Limiting reactants Concentration of solutions Percentage yield (Chemistry only) Atom economy (Chemistry only) Using concentrations of solutions (Chemistry only)	Content delivered: Unit 4 Chemical changes: Metal oxides Reactivity series Redox reactions Metals and acids Neutralisation Soluble salts pH scale Titration Strong and weak acids Electrolysis	Content delivered: Unit 5 Energy changes: Exothermic reactions Endothermic reactions Reaction profiles Energy change in reactions Cells and batteries (Chemistry only) Fuel cells (Chemistry only)	Content delivered: Unit 1 content review and exam prep Unit 2 content review and exam prep Unit 3 content review and exam prep Unit 4 content review and exam prep Unit 5 content review and exam prep
Key Words Level 2 Level 3	Nucleus, proton, neutron, electron, isotope, model, mass number, atomic number, group, period, shell, metal, non-	Ionic, covalent, metallic, delocalised, ion, lattice	Relative formula/atomic mass, concentration, mole, reactant, product	Neutralisation, oxidation, reduction, thermal decomposition, indicator, electrolysis, electrode, cathode, anode,	Exothermic, endothermic, activation, bond energy, fuel cells	Taken from all units
Where previous knowledge has occurred and future development KS2 → KS3 → KS4 → KS5	metal, ion, displacement KS2: States of matter KS3: Particle model and metals and nonmetals KS4: Electrolysis KS5: s, p, d orbitals, periodicity, transitions metals	KS2: Properties and changed of materials KS3: Particle model KS4: Electrolysis KS5: Electrons, bonding and structure, periodicity	KS2: States of matter KS3: The Periodic Table KS4: Isotopes KS5: Mole calculations, Ideal Gas Law, titrations	electrolyte, cation, anion KS2: Properties and changes of materials KS3: Acids and alkalis KS4: Bonding, structure and the properties of matter. KS5: Mole calculations, titrations, buffers	KS2: Energy KS3: Type of reaction and chemical energy KS4: Rates and reversible reactions KS5: Enthalpy, entropy, redox, electrode potentials	KS2: All relevant content KS3: All relevant content KS4: All taught units from Y10 & Y11 KS5: Used in all units
Common Misconceptions	Cells and atoms are compatible Only metals can conduct electricity When a substance melts or boils, all of the bonds are broken	Solids particles do not move You can change the formula of a substance when balancing an equation	The number of moles on both sides of the equation must be conserved like mass The mass of a mole of one substance is equal to the mass of a mole of another substance	Dilute and weak are the same and concentrated and strong are the same	Fuels are energy stores Energy can be created and used up Energy is released when chemical bonds break	Identified and addressed from end of unit tests
Literacy	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): Exo and endothermic reactions NHTW reviews as starter activities	NHTW reviews as starter activities
Numeracy	Calculating relative atomic mass Decimal places Significant figures	Negative numbers Percentages	Calculating percentages Using ratios Rearranging formulae Standard form	Balancing equations Logarithmic scales	Negative numbers Calculating a mean Solving algebra	Graph skills Rearranging formulae Ratios
Homework Assessment this half-term	Completion of kerboodle/Seneca/carousel quizzes Unit 1/2 test	Completion of kerboodle/Seneca/carousel quizzes Unit 2 test with unit 1 included	Completion of kerboodle/Seneca/carousel quizzes Mock exam – units 1-3	Completion of kerboodle/Seneca/carousel quizzes Unit 4 test with units 1-3 included	Completion of kerboodle/Seneca/carousel quizzes Unit 5 test with units 1-4 included	Completion of kerboodle/Seneca/carousel quizzes Mock exam – paper 1
Career opportunities Employment Links	LIFE SKILLS: Understanding why different elements react EMPLOYMENT: Radioactive waste consultant	LIFE SKILLS: Understanding why metals conduct electricity EMPLOYMENT: Nanotechnologist	LIFE SKILLS: Understanding why quantities of reactants in reactions is important EMPLOYMENT: Analytical chemist / toxicologist	LIFE SKILLS: Understanding the uses of different metals EMPLOYMENT: Principal food scientist	LIFE SKILLS: Understanding the safety with strong acids/alkalis EMPLOYMENT: Materials scientist for batteries	LIFE SKILLS: Resilience and organisation EMPLOYMENT: Analytical chemist
Practical activities/HSW	Halogen displacement reactions Group 1 reactions with water	Conservation of mass	Chemistry olympiad	Testing reactivity Forming salts Acids and alkalis Electrolysis Titration (Chemistry only)	Exothermic reaction	Required practical reviews
Employability Skills	Aiming high Creativity Leadership Listening Presenting Problem solving Literacy Numeracy Independence Communication Teamwork Staying positive	Aiming high Creativity Leadership Listening Presenting Problem solving Literacy Numeracy Independence Communication Teamwork Staying positive	Aiming high Creativity Numeracy Leadership Independence Listening Presenting Problem solving Communication Teamwork Problem solving Staying positive	Aiming high Creativity Leadership Listening Presenting Problem solving Literacy Numeracy Independence Communication Teamwork Problem solving Staying positive	Aiming high Creativity Leadership Listening Presenting Problem solving Literacy Numeracy Independence Communication Teamwork Staying positive	Aiming high Creativity Leadership Listening Presenting Problem solving Literacy Numeracy Independence Communication Teamwork Problem solving Staying positive
IT Skills	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