

Year 12 Science

	Tracking and Key Dates	EXAMS	Teacher 1 (4 lessons)	Teacher 2 (5 lessons)
04-Sep	Inset Mon&Tues		Topic 1 Atomic Structure and Periodic Table Introduction to AS course Prior knowledge	Transition Testing
11-Sep	Data Collection Opens		Mass of atoms, RAM, RMM, RIM Mass spectrometry	Topic 2A Bonding Introduction to AS Course Prior Knowledge of metallic and ionic bonding
18-Sep	21st Open Evening CRD Deadline		Ionisation Energy Electron orbitals	Metallic bonding Ionic bonding - dot cross diagrams
25-Sep	Work Scrutiny Week		Trends in ionisation energy Periodicity of Properties	Ionic crystals, ionic lattices Trends in ionic radii Prior Knowledge of Covalent Bonding
02-Oct	Appraisal deadline		Problem Class Test - Atomic Structure and Periodic Table	Structure of Covalent Molecules - Dot Cross Diagrams Properties of giant covalent lattices

09-Oct	Data Collection Closes		Topic 5 Formulae, Equations and Amounts Prior Knowledge - Formulae, Equations, Moles	Electron pair repulsion theory and shapes Electronegativity Polarity of molecules
16-Oct			Displacement, Precipitation, Acid Reactions Preparation of a salt (Copper Sulphate)	Types of intermolecular forces Link forces to molecular properties
23-Oct	AUTUMN HALF TERM			
30-Oct	Inset Mon		The Mole % composition, empirical and molecular formulae Reacting mass and volumes	Hydrogen bonding and the properties of water Measurement and explanation of solubility Masterclass on Bonding
06-Nov	Data Collection Opens	Year 8 Exam week	Core Practical 1 - Molar Gas Volume	Test on bonding and intermolecular forces Topic 6A-E Introduction to Organic Chemistry Prior knowledge of alkanes, alkenes, alcohols
13-Nov		Year 11 Mock	Solution Concentration & Titrations Core Practical 2 - Solid, Acid, Solution	Isomerism, reaction types. Properties of alkanes (bpt, mpt). Products of combustion.
20-Nov	Observation Week		Core Practical 3 - Concentration of HCl Problem Class	Reactions of alkanes - radical reactions Properties of alkenes

27-Nov			Test Formulae, Equations and Amounts Topic 3 Redox Prior knowledge oxidation and reduction	Reactions of alkenes Mechanism of electrophilic addition
04-Dec	Data Collection Closes (Y11)		Oxidation Number and REDOX Writing REDOX equations	Polymerisation reactions Impact of polymers on the environment
11-Dec	Data Collection Closes		Topic 4A-C Elements of Group 1,2 & 7 Prior knowledge of Group 2 Trends in ionisation energy, atomic radii	Introduction to Halogenoalkanes Preparation of Halogenoalkanes
18-Dec	School Finishes 19th Dec		Exam Preparation	
25-Dec	CHRISTMAS			
01-Jan	School Resumes 3rd Jan	Year 12-13 Mock	Mock Exams	Mock Exams
08-Jan	Year 10 Work Experience		Test Feedback	
15-Jan	Work Scrutiny Week		Thermal decomposition of Group 1 and Group 2 nitrates and carbonates Flame colours for group 1 and 2 elements	Core Practical 4 - Rates of Hydrolysis Introduction to Alcohols
22-Jan	Data Collection Closes (Y12&13)		Group 7 trends in mpt, bpt, electronegativity Trends in reactivity - displacement reactions	Reactions of alcohols Reactions of alcohols

29-Jan	Data Collection Closes		Reactions of the halogens Tests for negative ions (X ⁻ , CO ₃ ²⁻ , SO ₄ ²⁻ , NH ₄ ⁺)	Practical techniques - master class Core Practical 5 - Oxidation of ethanol
05-Feb			Test on Topic 4 - Periodic Table Topic 8 Energetics Prior knowledge on energetics	Core Practical 6 - Chlorination of an alcohol Organic Master class - masterclass
12-Feb	SPRING HALF TERM			
19-Feb			Standard enthalpies. Energy level diagrams. Enthalpy determinations (reaction and combustion)	Topic 7A&7B - Mass Spec and IR Spec Test on Organic Chemistry Introduction to organic analysis
26-Feb	Observation Week Data collection Opens		Core Practical 8 - Determine enthalpy change.	Mass spectrometry Infra-red spectroscopy
05-Mar		MOCKS 11-13	Mock Exams	Mock Exams
12-Mar		MOCKS 11-13	Mock Exams	Mock Exams
19-Mar	Data collection Yr11-13		Hess's Law and Hess Cycles Hess Law Problems	Core Practical 7 - Analysis of some inorganic and organic unknowns

26-Mar	Data Collection Closes Yr 7-10 School Finishes 29th Mar		Bond enthalpy calculations Energetic masterclass	Topic 9 Kinetics Prior knowledge of kinetics
02-Apr	EASTER			
09-Apr				
16-Apr			Topic 10 Reversible reactions Le Chatelier's Principle Equilibria in practice.	Collision theory, measuring rates Maxwell-Boltzmann theory Effect of catalysts on rates of reaction
23-Apr	Data Collection Opens		Exam Preparation	
30-Apr				
07-May				
14-May	Data Collection Closes			

21-May			Paper 1	
28-May	SUMMER HALF TERM			
04-Jun		Year 7 Exams	Paper 2	
11-Jun	Data Collection Opens			
18-Jun			Topic 11-12 Acid Base Equilibria Rejoining Course - Recap of Equilibria from GCSE	Topic 13A-B Born-Haber and Entropy Rejoining Course -Recap of Hess Law and Enthalpy
25-Jun		Year 10 Exams	Kc and Kp expressions Effect of changing temperature on Kc and Kp Le Chatelier Principle	Born Haber Cycle - Terms and construction Comparison of experimental and theoretical lattice energy
02-Jul		Year 9 Exams	Experimental determination of Equilibrium Constants Practical 4.6 Bronsted-Lowry Definition Acid/Base	Enthalpy of solution and hydration Effect of ionic charge and radius on LE and Hydration
09-Jul			pH definition and experimental measurements Strong & Weak acids, Calculation of pH strong acid	Lattice Energy Practical 4.5 Introduction to concept of entropy

16-Jul	Data Collection Closes Yr 7-10 and BTEC School Finishes 20th July	Acid dissociation constants for weak acids Ionic product of water Calculation of pH of weak acid	Entropy of system and surroundings Change in Chemical Reaction - Practical 4.4
		Measurement of the pH of a weak acid Practical 4.8 Determination of Ka for a weak acid	Calculation of total entropy changes Calculation and application of Gibbs Free Energy