



Year 12 Chemistry

Subject and Year Group	Autumn Year 12	Autumn 2 Year 12	Spring 1 Year 12	Spring 2 Year 12	Summer 1 Year 12	Summer 2 Year 12
Topic/Unit to be studied	Amount of substance Atomic structure	Structure and Bonding Periodicity, Redox, Group 2 & Group 7	Kinetics Equilibria Energetics	Introduction to Organic Chemistry & alkanes Haloalkanes Alcohols	Alkenes Organic analysis	Chromatography Practical skills/ CPAC checkpoint
Core Knowledge and skills	Mass, Moles and amount of substance Empirical formula %Yield and atom economy Gas volumes Amount of substance in solutions Rp1- Make up a volumetric solution and carry out a simple acid-base titration. rearranging, units, writing formula, balancing equations Fundamental particles Isotopic mass Mass spectroscopy Ionisation energies Electron configurations	Types of bonding Properties of structures Bonding shapes Intermolecular forces Periodicity Oxidation states Redox reactions and half equations Properties and reactions of group 2 elements Properties and reactions of group 7 elements Uses of chlorine RP4- Identification of ions with test tube reactions	Collision theory Maxwell-Boltzmann distribution Catalysts RP3- Investigation of how the rate of a reaction changes with temperature. Changing the position of equilibrium Kc calculations manipulating equations, graph drawing to AQA expected standards Calorimetry Enthalpy change Bond enthalpy Hess's Law RP2- Measurement of an enthalpy change.	Nomenclature Isomerism Crude oil Combustion Haloalkanes Free radical substitution CFC's & ozone Nucleophilic substitution Elimination reactions Production of alcohol Oxidation of alcohols Dehydration of alcohols RP5- Distillation of a product from a reaction	Electrophilic addition Addition polymers Test tube identifications Mass spectroscopy IR spectroscopy RP6- Tests for alcohol, aldehyde, alkene and carboxylic acid	Thin layer chromatography and instrumental chromatography techniques RP12- Separation of species by thin-layer chromatography RP10- Preparation of a pure organic solid, aspirin



Assessment

Regular homework will be self-assessed with teacher mark schemes and guidance.
End of topic assessments will be carried out and teacher assessed.
Students will receive continuous feedback and assessment on lab books and required practical activities to achieve CPAC.