A level Chemistry Curriculum Map

	Term 1.1	Term 1.2	Term 2.1	Term 2.2	Term 3.1	Term 3.2
Year 12 **teacher A**	**Atomic structure** ● Fundamental particles ● Mass number and isotopes ● Time of flight mass spectrometry ● Electron configuration **Amount of substance** ● The mole and the Avogadro constant ● Empirical and molecular formula, reacting mass calculations ● Balanced equations and reacting mass calculations ● ***Required practical 1: Make up a volumetric solution and carry out a simple acid-base titration.***		**Energetics** Enthalpy change Calorimetry ● ***Required practical 2: Measurement of an enthalpy change.*** Applying Hess's Law Bond Enthalpies **Chemical equilibria and Le Chatelier's principle and K_c** **Oxidation, reduction and redox equations**		**Group 2, the alkaline earth metals** **Group 7 (17), the halogens** Trends in properties Uses of chlorine and chlorate(I) ● ***Required practical 4: Carry out simple test tube reactions to identify cations and anions*** **Periodicity** Physical properties of period 3 elements **Thermodynamics** Born-Haber cycles Gibbs free-energy change and entropy change	
Year 12 **teacher B**	**Bonding (Physical** ● Types of bonding and physical properties ● Shapes of molecules and intermolecular forces **Kinetics** ● Collision theory ● Factors that affect the rate of reaction ● ***Required practical 3: Investigation of how the rate of reaction changes with temperature.*** **Introduction to organic chemistry** ● Nomenclature		**Alkanes** Fractional distillation Reactions of alkanes **Halogenoalkanes** Reactions of halogenoalkanes Ozone depletion **Alkenes** Structure, bonding and reactions of alkenes Addition polymerisation **Alcohols** Production of alcohols Reactions of alcohols ● ***Required practical 5: Distillation of a product from a reaction***		**Organic Analysis** Identification of functional groups by test tube reactions Mass spectrometry Infrared spectroscopy ● ***Required practical 6: Tests for alcohol, aldehyde, alkene and carboxylic acid*** **Optical Isomerism** **Aldehydes and ketones**	

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	Term 1.1	Term 1.2	Term 2.1	Term 2.2	Term 3.1
Year 13 **teacher A**	**Acids and Bases** Weak acids and bases; K_a for weak acids pH curves, titrations and indicators Buffer action ● ***Required practical 9: Investigate how pH changes when a weak acid reacts with a strong base and when a strong acid reacts with a weak base.*** **Electrode potentials and electrochemical cells** ● ***Required practical 8: Measuring the EMF of an electrochemical cell.*** Commercial applications of electrochemical cells		**Transition metals** General properties of transition metals Substitution reactions Shapes of complex ions Formation of coloured ions Variable oxidation states Catalysts **Reactions of ions in aqueous solutions** ● ***Required practical 11: Carry out simple test tube reactions to identify transition metal ions in aqueous solution.***		**Properties of period 3 elements and their oxides**
Year 13 **teacher B**	**Carboxylic acids and derivatives** Properties and uses Reactions of carboxylic acids and esters ● ***Required practical 10: Preparation of: a pure organic solid and test of its purity; a pure organic liquid.*** **Rate equations** Determination of rate equation ● ***Required practical 7: Required practical 7 Measuring the rate of reaction: by an initial rate method; by a continuous monitoring method.*** **Aromatic chemistry** Bonding and properties		**Amines** Preparation of amines Properties and reactions of amines **Polymers** Condensation polymers Biodegradability and disposal of polymers **Amino acids, proteins and DNA** Amino acid structure and properties Protein structure, hydrolysis and chromatography Enzymes DNA structure Action of anticancer drugs **Equilibrium constant K_p for homogeneous systems**		**Chromatography** Thin layer chromatography (TLC) Column chromatography (CC) Gas chromatography (GC) ● ***Required practical 12: Separation of species by thin layer chromatography.*** **Organic synthesis**

A level Chemistry Curriculum Map

	Reactions of benzene rings	**Nuclear magnetic resonance spectroscopy (NMR)**	

A level Chemistry Assessment

Paper	Topics	Assessment Format	Question Style
1	• Relevant physical chemistry topics (sections 3.1.1 to 3.1.4, 3.1.6 to 3.1.8 and 3.1.10 to 3.1.12) • Inorganic chemistry (section 3.2) • Relevant practical skills	written exam: 2 hours 105 marks 35% of A-level	**105 marks** of short and long answer question
2	• Relevant physical chemistry topics (sections 3.1.2 to 3.1.6 and 3.1.9) • Organic chemistry (section 3.3) • Relevant practical skills	written exam: 2 hours 105 marks 35% of A-level	**105 marks** of short and long answer questions
3	• Any content • Any practical skills	written exam: 2 hours 90 marks 30% of A-level	**40 marks** of questions on practical techniques and data analysis **20 marks** of questions testing across the specification **30 marks** of multiple choice questions