KS5 Chemistry Curriculum Map

Big Idea	Year 12	Year 13
Physical Chemistry	Topic 1: Atomic Structure and the Periodic Table ● Atomic structure ● Electronic configuration ● Understanding periodicity Topic 2: Bonding and Structure ● Covalent, ionic and metallic bonding ● Intermolecular forces ● Shapes of molecules and bond angles Topic 5: Formula Equations and and Amounts of Substance ● Calculating the number of moles in solids, liquids and gases ● Molar volumes of gases ● Preparing standard solutions Topic 8: Energetics I ● Enthalpy change calculations ● Hess' law ● Hess cycles Topic 9: Kinetics I ● Collision theory ● Maxwell Boltzmann dIstribution ● Catalysis Topic 10: Equilibrium I ● Dynamic equilibrium ● Equilibrium constants	Topic 11: Equilibrium II ● Equilibrium constants in homogenous and heterogenous reactions ● How reaction conditions affect equilibrium constants Topic 12: Acid Base Equilibria ● Bronsted Lowry acids and bases ● Dissociation constants ● Buffer solutions ● Titrations curves Topic 13: Energetics ● Lattice energy ● Born Haber cycles ● Entropy Topic 16: Kinetics II ● Rate equations and order of reaction ● Rate determining steps
Inorganic Chemistry	Topic 3: REDOX I ● Oxidation number ● Reduction and oxidation ● Disproportionation reactions Topic 4: Inorganic Chemistry and the Periodic Table ● Trends of group 1 and 2	Topic 14: REDOX II ● Standard electrode potential ● Electrochemical cells ● REDOX titrations Topic 15: Transition Metals ● Complex ions and ligands ● Reactions of transition metals

	elements ● Trends and reactions of group 7 elements ● Analysis of inorganic compounds Topic 7: Modern Analytical Techniques I ● Mass spectrometry ● Infrared spectroscopy	Topic 19: Modern Analytical Techniques II ● Mass spectrometry ● Nuclear magnetic resonance (NMR) ● Chromatography
Organic Chemistry	Topic 6: Organic Chemistry I ● Shapes and structures of alkanes and alkenes ● Free radical substitution reactions ● Electrophilic addition reactions	Topic 17: Organic Chemistry II ● Chirality ● Carbonyl compounds ● Carboxylic acids Topic 18: Organic Chemistry III ● Arenes and Benzene ● Amines, amides, amino acids and proteins ● Organic synthesis