Curriculum Sequencing Grid: *Chemistry A-level*

Year 12	**Term 1**	**Term 2**	**Term 3**
Unit (Tablet in 39 week plan)	Bonding Energetics Kinetics Intro to Organics Atomic Structure Amount of Substance	Alkanes Alkenes Equilibria Redox Periodicity	Halogenoalkanes Alcohols Analysis Group 2 Group 7
Key Retainable Knowledge (Required for Y11/13) • What… How…. Why….	Atomic structure Mole calculations Titrations Types of bonding Naming organic chemicals Reactions of alkane and alkenes	Periodicity Equilibrium constant Maxwell- Boltzmann distribution IMF Infra red spectroscopy Testing organic chemicals	Behaviour of group 2 Behaviour of group 7 Oxidation reactions Mechanisms Testing organic chemicals
Key Technical Vocabulary (To be modelled and deliberately practiced in context.)	Isotopes, mass spectrometry, ionisation, spdf notation, Avogadro's no, isomers, geometric, E-Z nomenclature, electrophile, addition, cracking, polymerisation, free radical	Periodicity, equilibria, Le Chatelier's principle, Van der waals, dipole, electronegativity, hydrogen bonding, population, absorption, transmittance, resonance, Benedicts	Combustion, formation, extrapolation, halogens, precipitation, oxidation, reduction, disproportionation, reflux, distillation, nucleophile, substitution,
Opportunities for Reading	Chemguide – Jim Clarke	Bad Science – Ben Goldacre	Bad Science – Ben Goldacre

Curriculum Sequencing Grid: *Chemistry A-level*

Developing Cultural Capital (exposure to very best- essential knowledge and skills of educated citizens – appreciation of human creativity and achievement.)	Sustainble use of hydrocarbon sources, plastics and the environment	Industrial chemistry and environmental effects	
Cross Curricular Links (Authentic Connections)	Maths and physics	Maths and biology	Maths and physics
Key Assessment	Topic Tests	Topic Test	Topic Tests Mock Papers
How Science Work Skills in Science	• These skills will continuously throughout the year, some or all of which will be covered within each topic o Variables o Equipment o Risk assessments o Writing a method o Presenting data (bar charts and line graphs) o Interpreting data o Types of error (measuring, systematic, random) o Equations, calculations and units o Evaluating o Models		

Curriculum Sequencing Grid: *Chemistry A-level*

Year 13	**Term 1**	**Term 2**	**Term 3**
Unit (Tablet in 39 week plan)	Equilibria Organics Rates Acids and Bases Electrochemistry	Polymers Organic Synthesis Equilibria Transition Metals Aq Ions	
Key Retainable Knowledge (Required for Y11/13) • What… How…. Why….	Electrode potentials Calculating Ecell Structure of benzene Electrophilic substitution Amines and amino acids DNA	Synthetic routes Synoptic understanding of Organic reactions Inorganic chemistry from Y12 into advancements for Y13 Principles of NMR Properties of transition metals Tests for transition metal ions	
Key Technical Vocabulary (To be modelled and deliberately practiced in context.)	Cell, Standard (hydrogen) electrode, aromatic, delocalised, amino acid, protein, DNA, potential difference, Feasible/spontaneous, primary, secondary, tertiary, Delocalised	Nucleophile ,electrophile, free radical, addition, reduction, oxidation, substitution, elimination, Mechanism, Absorption, electron shell level, oxidation state, colour, heterogeneous, homogenous, LORA, yield, recrystalisation	

Curriculum Sequencing Grid: *Chemistry A-level*

Opportunities for Reading	The selfish gene - Richard Dawkins	The disconnection approach – Stuart Warren	Bad Science – Ben Goldacre
Developing Cultural Capital (exposure to very best- essential knowledge and skills of educated citizens – appreciation of human creativity and achievement.)	Environmentally friendly batteries and fuel cells, Diet, Cancer treatments	Drug testing, Importance of environmental conservation	
Cross Curricular Links (Authentic Connections)	Maths and physics	Maths, physics and biology	Maths and physics
Key Assessment	Topic Tests Mock Papers	Topic Tests Mock Papers	
How Science Work Skills in Science	• These skills will continuously throughout the year, some or all of which will be covered within each topic o Variables o Equipment o Risk assessments o Writing a method o Presenting data (bar charts and line graphs) o Interpreting data o Types of error (measuring, systematic, random) o Equations, calculations and units o Evaluating o Models		