

Archbishop Beck Catholic College Long Term Plan for A level Chemistry

Year 12 Chemistry

Autumn Half Term 1	Half Term 2	Key Vocabulary/Reading Opportunities
<p>Topic Areas to be covered:</p> <p>Teacher A Introduction to Organic Chemistry, Alkanes</p> <p>Teacher B Atomic Structure, Amount of substance</p> <p><u>AP1 Assessment</u></p>	<p>Topic Areas to be covered:</p> <p>Teacher A Halogenoalkanes, Alkenes</p> <p>Teacher B Amount of substance, Energetics</p> <p><u>AP 2 Assessment</u></p>	<p>Mechanism, displayed structure, structural formula, skeletal formula, isomer.</p> <p>Mole, orbital, electron, repulsion, Molarity, concentration, pressure, time of flight.</p>
Spring Half Term 3	Half Term 4	Key Vocabulary/Reading Opportunities
<p>Teacher A Alcohols, organic analysis</p> <p>Teacher B Chemical Equilibria and Le Chatelier's principle and K_c, Bonding</p>	<p>Teacher A Oxidation, reduction and Redox equations, Group 2 alkaline earth metals, Group 7 the halogens.</p> <p>Teacher B Bonding, Kinetics</p> <p><u>AP3 Assessment</u></p>	<p>Primary, secondary, tertiary, fermentation, elimination, dehydration, oxidation, reduction, aldehydes, ketones, mass spectrometry, infrared spectroscopy.</p> <p>Equilibria, constant, expressions, ionic, covalent, metallic, electronegativity, collision theory, catalysts.</p>
Summer Half Term 5	Half Term 6	Key Vocabulary/Reading Opportunities
<p>Teacher A Periodicity, revisit earlier topics in preparation for exams.</p> <p>Teacher B Revisit earlier topics in preparation for exams.</p>	<p>Teacher A Revisit required practicals for Year 12 to improve knowledge and skills.</p> <p>Teacher B Revisit required practicals for Year 12 to improve knowledge and skills.</p>	<p>Hypothesis, analysis, procedure, apparatus, titration, enthalpy change, cations and anions, rate, distillation.</p>

Year 12

Wider learning experiences to support this A Level	Learning Characteristics instilled in the curriculum	Career Opportunities
<ul style="list-style-type: none">• Science lab visits• Volunteering opportunities• Study skills visit	<p>Confidence Use of consolidations to revisit prior learning and allow to students to feel open to making mistakes. Encourage discussion of mistakes and praise those who offer up incorrect solutions/alternate methods for discussion.</p> <p>Positive High expectations in presentation of exercise books and weekly homework.</p> <p>Resilience Learners are challenged from the word go with high expectations of presentation and work ethic. Independent tasks, reading, researching, assessment tasks, mind maps.</p>	<ul style="list-style-type: none">• Science careers week• Work experience• University visits• Volunteering• Absolute Chemistry Outreach programme.

Metacognition Methods applied in Teaching

- Consolidation exercise at the beginning of every lesson to revisit prior learning.
- Give sufficient thinking time during discussions.
- Split topics into appropriate chunks depending on student ability to reduce cognitive overload.
- Variation of teaching styles
- Discussion of solutions and the various approaches to problems to find the most efficient method.
- Modelling of extended questions
- Valiant vocabulary highlighted in notes and through exam mark schemes and consolidation tasks.
- Independent learning tasks.

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Year 13

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<p>Teacher A Optical isomerism, aldehydes and ketones, Carboxylic acids and derivatives</p> <p>Teacher B Thermodynamics, rate equations <i>AP1 Assessment</i></p>	<p>Teacher A Aromatic chemistry, amines, polymers</p> <p>Teacher B Rate equations, Equilibrium constant K_p, <i>AP2 Assessment</i></p>	<p>Chiral centre, stereoisomerism, optical isomerism, enantiomer, racemic mixture/racemate, carbonyl, carboxylate, hydrolysis, acylation, benzene, delocalised. Enthalpy, lattice dissociation, Born-Haber, entropy, feasible, spontaneous, free energy, rate, rate constant, rate expression, Arrhenius equation, rate determining.</p>
Spring Half Term 3	Half Term 4	Key Vocabulary/Reading Opportunities
<p>Teacher A Amino Acids, proteins and DNA, NMR spectroscopy</p> <p>Teacher B Acids and bases, electrode potentials and electrochemical cells</p>	<p>Teacher A Chromatography, Organic synthesis, properties of period 3 elements and their oxides</p> <p>Teacher B Electrode potentials and electrochemical cells, Transition metals, Reactions of ions in solution <i>AP3 Assessment</i></p>	<p>Half cells, electrode, standard, phase boundary, buffer, Bronsted-Lowry, pH, ionic product, weak, strong, dissociation, titration. Amines, amides, polymerisation, condensation, polypeptide, biodegradable, zwitterions, peptide link, TLC, GCMS, enzymes, DNA, synthesis, reaction scheme, NMR, chemical shift, integration trace.</p>
Summer Half Term 5	Half Term 6	Key Vocabulary/Reading Opportunities
<p>Teacher A Revision for external paper, revisit required practicals</p> <p>Teacher B Transition metals, revision for external paper</p>	<p>Teacher A and B Consolidation of all topics from both Year 1 and 2 to support exam success.</p> <p>External Papers</p>	<p>d-block element, transition metal, ligand, chelation, multidentate, catalysis,</p>

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