



	<ul style="list-style-type: none"> <li>Acids and bases, titrations, making standard solutions, carbonates, redox</li> </ul> <p><b>PAG 1</b> – Moles Determination 1.3: Determination of the formula for magnesium oxide</p> <p><b>PAG 2</b> – Acid-Base Titration 2.1 Determination of concentration of hydrochloric acid</p> <p><b>TEACHER 2</b></p> <p><b>Module 2</b> 2.2 Electrons bonding and structure.</p> <p><u>Chapter 5.2 &amp; 5.3 Electrons and bonding</u></p> <ul style="list-style-type: none"> <li>Ionic and covalent bonding</li> </ul> <p><u>Chapter 6 Shapes of molecules and intermolecular forces</u></p> <ul style="list-style-type: none"> <li>Shapes of molecules, bond angles</li> <li>Electronegativity and bond polarity</li> <li>Intermolecular forces</li> </ul>		<p>functions – A level only.</p> <ul style="list-style-type: none"> <li>Plot two variables from experimental or other data.</li> </ul>	<p><b>Core Practicals</b> – ACPs – Analysing – Complex and multistep problem solving</p> <p>VAAAs – Agile – Enquiring &amp; Hard working – Practice.</p> <p>Shapes of Molecules and how it's linked to the properties of certain molecules – HPL focus – Linking and Meta-thinking</p> <p>Research Project on a Compound of your choice – Presentation of your</p>	<p><b>Revision for End of Chapter Tests.</b></p> <p><b>Independent study booklets</b></p> <p><b>Links to Prior Learning:</b></p> <ul style="list-style-type: none"> <li>Covalent bonding</li> <li>Simple molecules</li> <li>Molecular formulae</li> <li>Nomenclature and formulae of alkanes and alcohols</li> <li>Chain isomers</li> <li>Position isomers</li> <li>Organic chemicals and hydrocarbons</li> <li>Nomenclature and formulae of alkanes</li> <li>Nomenclature and formulae of alkanes and alkenes</li> <li>Features of homologous series</li> <li>Formulae of alkanes</li> <li>Balancing equations</li> <li>Alkanes as fuels</li> <li>Pollutants from using fuels</li> <li>Balancing equations</li> <li>Covalent bonding</li> </ul> <p><b>Homework:</b> <b>Research Project on a Compound of your choice – Presentation of your finding</b></p>
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	<p><b>Module 4</b> Core Organic Chemistry</p> <p>4.1 Basic Concepts and hydrocarbons</p> <p><u>Chapter 11 Basic Concepts of organic chemistry</u></p> <ul style="list-style-type: none"> <li>• Organic nomenclature, types of formulae</li> <li>• Nomenclature of organic compounds</li> <li>• Representing the formulae of organic compounds</li> <li>• Isomerism</li> </ul>			<p>finding – HPL Focus ACPs- Linking- Big picture thinking and seeing alternative perspectives. VAAs – Empathetic - Confident</p>	<p>– HPL Focus ACPs- <b>Linking- Big picture thinking and seeing alternative perspectives.</b> <b>VAAs – Empathetic – Confident (Lecture Theatre)</b></p>
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<p><b>TERM 2</b></p> <p><b>Module 3 Periodic Table and Energy</b></p> <p><b>Module 4 Core Organic Chemistry (Part 2)</b></p>	<p><b>TEACHER 1</b> <b>Module 3</b> Periodic Table and Energy 3.1 The Periodic Table</p> <p><u>Chapter 7 Periodicity</u></p> <ul style="list-style-type: none"> <li>• Periodic table, ionisation energies</li> <li>• Patterns in structure and bonding</li> </ul> <p><u>Chapter 8 Reactivity trends</u></p> <ul style="list-style-type: none"> <li>• Group 2, group 7, ion tests</li> </ul> <p>3.2 Physical Chemistry</p> <p><u>Chapter 9 Enthalpy</u></p> <ul style="list-style-type: none"> <li>• Enthalpy definitions, measuring enthalpy of combustion</li> <li>• Bond enthalpy calculations</li> <li>• Hess' law</li> </ul> <p><b>PAG 4</b> – Quantitative analysis of ions 4.1 Identifying unknowns 1 <b>PAG 3</b> – Enthalpy determination 3.2 Determination of enthalpy change of reaction by Hess' law</p> <p><b>TEACHER 2</b> <b>Module 4</b></p>	<p><b>Assessments:</b></p> <p>End Of Chapter 7-9 12-15 assessment – 60 min assessment made up of exam questions</p>	<ul style="list-style-type: none"> <li>• Plot two variables from experimental or other data.</li> <li>• Understand and use the symbol &gt;</li> </ul>	<p><b>1. Analysing,</b> <b>2. Linking,</b> <b>3. Meta-thinking,</b> <b>4. Creating and</b> <b>5. Realising.</b></p> <p><b>Core Practicals –</b> ACPs – Analysing – Complex and multistep problem solving</p> <p>VAA's – Agile – Enquiring &amp; Hard working – Practice.</p>	<p><b>Students should have prior knowledge of:</b></p> <ul style="list-style-type: none"> <li>• Atomic structure</li> <li>• Isotopes</li> <li>• Ions</li> <li>• Relative atomic mass</li> <li>• Relative formula mass and relative molecular mass</li> <li>• Simple covalent molecules</li> <li>• Atomic (proton) number</li> <li>• Electronic configurations</li> <li>• Formation of ions from atoms</li> <li>• Groups and periods</li> <li>• Repeating patterns in first ionisation energy across different periods.</li> </ul> <p><b>Students should have prior knowledge of:</b></p> <ul style="list-style-type: none"> <li>• Names and structures of organic compounds</li> <li>• Naming and classifying halogenoalkanes</li> <li>• Hydrolysis and nucleophilic substitution with hydroxide ions</li> <li>• Precipitation reactions of aqueous halide ions with aqueous silver nitrate</li> </ul>
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	<p>Core Organic Chemistry</p> <p>Remainder of section 4.1</p> <p><u>Chapter 12 Alkanes</u></p> <ul style="list-style-type: none"> <li>Reactions, free radical substitution mechanisms</li> </ul> <p><u>Chapter 13 Alkenes</u></p> <ul style="list-style-type: none"> <li>Stereoisomerism, reactions, addition polymers and environmental impact</li> </ul> <p><u>Chapter 14 Alcohols</u></p> <ul style="list-style-type: none"> <li>Reactions and mechanisms</li> </ul> <p>PAG 5 – Synthesis of an organic liquid – 5.3 Oxidation of ethanol</p> <p><u>Chapter 15 Haloalkanes</u></p> <ul style="list-style-type: none"> <li>Hydrolysis, reaction mechanisms, organohalogens and environmental impact.</li> </ul> <p>PAG 7 – Qualitative analysis of organic functional groups – 7.2 Identifying organic unknowns 2</p>			<p>Problems with plastics – ACPs Linking – Big picture thinking and VAAs Empathetic - concerns for the society.</p> <p><b>Core Practicals –</b> ACPs – Analysing – Complex and multistep problem solving</p> <p>VAAs – Agile – Enquiring &amp; Hard working – Practice.</p>	<ul style="list-style-type: none"> <li>Nomenclature and structure of alcohols</li> <li>Reactions of alcohols with oxygen in air, halogenating agents and concentrated phosphoric acid</li> <li>Reactions of alcohols</li> <li>Oxidation of ethanol under distillation or reflux conditions</li> </ul> <p><b>Homework:</b> Kerboodle – practice exam questions.</p> <p><b>Uplearn tasks</b></p> <p><b>Revision for End of Chapter Tests.</b></p> <p><b>Independent study booklets</b></p> <p><b>Variety of different exam questions and independent study of concepts learnt in class</b></p>
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<p><b>TERM 3</b></p> <p><b>Module 3 Periodic Table and Energy</b></p> <p><b>Module 4 Core Organic Chemistry</b></p>	<p><b>TEACHER 1</b> Remainder of <b>Module 3</b></p> <p>3.2.3 Chemical Equilibrium</p> <p><u>Chapter 10 Reaction rates and equilibrium</u></p> <ul style="list-style-type: none"> <li>• Factors affecting rate of reaction</li> <li>• Catalysis</li> <li>• Boltzmann distribution</li> <li>• Le Chatelier's principle</li> <li>• Kc introduction</li> </ul> <p><b>YEAR 13 Content</b></p> <p><u>Chapter 22.1 &amp; 22.2 Enthalpy and entropy</u></p> <ul style="list-style-type: none"> <li>• Lattice enthalpy</li> <li>• Born-Haber cycles</li> </ul> <p><b>TEACHER 2</b> Remainder of <b>Module 4</b></p> <p>4.2.3 Organic synthesis</p> <p>4.2.4 Analytical techniques</p> <p><u>Chapter 16 Organic synthesis</u></p>	<p><b>Assessments:</b></p> <p>End of chapter 10, 16 &amp; 17 and 25&amp;26 assessment – 60 min assessment made up of exam questions</p>	<ul style="list-style-type: none"> <li>• Use ratios, fractions and percentages.</li> <li>• Use an appropriate number of significant figures.</li> <li>• Substitute numerical values into algebraic equations using appropriate units for physical quantities.</li> <li>• Recognise and make use of appropriate units in calculation.</li> <li>• Recognise and use expressions in decimal and ordinary form.</li> </ul>	<p><b>1. Analysing, 2. Linking, 3. Meta- thinking, 4. Creating and 5. Realising.</b></p> <p>Writing Chemical Equations – Analysis – precision.</p> <p>Using knowledge of</p>	<p><b>Students should have prior knowledge of:</b></p> <ul style="list-style-type: none"> <li>• Alkanes as fuels</li> <li>• Pollutants from using fuels</li> <li>• Balancing equations</li> <li>• Covalent bonding</li> <li>• Structure of alkanes</li> <li>• Chlorination of methane</li> <li>• Nomenclature of organic compounds</li> <li>• Hydrogenation of alkenes</li> <li>• Electrophilic addition and alkenes</li> <li>• Electronegativity</li> <li>• Permanent dipoles</li> <li>• Names and structures of organic compounds</li> <li>• Naming and classifying halogenoalkanes</li> <li>• Hydrolysis and nucleophilic substitution with hydroxide ions</li> <li>• Precipitation reactions of aqueous halide ions with aqueous silver nitrate</li> <li>• Nomenclature and structure of alcohols</li> <li>• Reactions of alcohols with oxygen in air, halogenating</li> </ul>
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	<ul style="list-style-type: none"> <li>Practical techniques, synthetic reaction routes</li> </ul> <p><u>Chapter 17 Spectroscopy</u></p> <ul style="list-style-type: none"> <li>Mass spectrometry</li> <li>Infrared spectroscopy</li> </ul> <p>Revision for end of year exams</p> <p><b>YEAR 13 Content</b></p> <p>Organic chemistry and analysis 6.1 Aromatic compounds, carbonyls and acids</p> <p><u>Chapter 25 Aromatic chemistry</u></p> <ul style="list-style-type: none"> <li>Benzene nomenclature, reaction mechanisms, phenols, directing groups in reactions</li> </ul> <p><u>Chapter 26 Carbonyls and carboxylic acids</u></p> <ul style="list-style-type: none"> <li>Testing for carbonyls, reaction mechanisms, carboxylic acids and their derivatives</li> </ul>		<ul style="list-style-type: none"> <li>Find arithmetic means.</li> <li>Recognise and use expressions in decimal and ordinary form</li> <li>Identify uncertainties in measurements and use simple techniques to determine uncertainty when data are combined</li> <li>Plot two variables from experimental or other data</li> </ul>	<p><b>Structure of Organic Compounds and linking to their behaviour in mechanisms – ACPs – Linking - generalisation and Analysing – Complex and Multi-step problem solving</b></p> <p><b>Mass Spectrometry data to structure of the Atom and looking at emission spectra – HPL ABSTRACTION</b></p> <p><b>Core Practicals – ACPs – Analysing – Complex and multistep</b></p>	<p>agents and concentrated phosphoric acid</p> <ul style="list-style-type: none"> <li>Reactions of alcohols</li> <li>Oxidation of ethanol under distillation or reflux conditions</li> </ul> <p><b>Links to prior learning:</b></p> <ul style="list-style-type: none"> <li>Ar and Mr values from mass spectrometry</li> <li>Predicting mass spectra for diatomic molecules</li> <li>Formation of radicals</li> <li>Covalent bonding</li> <li>Deducing structures from the m/z ratios of the molecular ion and fragmentation patterns</li> </ul> <p><b>Homework:</b> <b>Kerboodle – practice exam questions.</b></p> <p><b>Uplearn tasks</b></p> <p><b>Revision for End of Chapter Tests.</b></p> <p><b>Variety of different exam questions and independent</b></p>
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				<p>problem solving</p> <p>VAs – Agile – Enquiring &amp; Hard working – Practice.</p>	<p>study of concepts learnt in class.</p> <p>Independent study booklets</p>
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