



*At St Peter's we believe that a broad and balanced curriculum with a strong academic core is a right for all pupils. We seek to encourage pupils to explore subjects of interest around their in-school learning and to enhance their curriculum experience through enrichment.*

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question
<b>C2: Elements, Compounds and Mixtures</b>	<b>C2: Elements, Compounds and Mixtures</b>	<b>C2: Elements, Compounds and Mixtures</b> <b>C3: Chemical Reactions</b>	<b>C3: Chemical Reactions</b>	<b>C3: Chemical Reactions</b>	<b>C3: Chemical Reactions</b> <b>C4: Predicting and Identifying Reactions and Products</b>
Knowledge	Knowledge	Knowledge	Knowledge	Knowledge	Knowledge
<ul style="list-style-type: none"> <li>The structure of the atom</li> <li>Properties of sub-atomic particles</li> <li>The link between atomic structure and the periodic table</li> <li>The number of sub-atomic particles in isotopes</li> <li>Ionic bonding between metal and non-metal atoms</li> <li>Properties of ionic compounds</li> <li>Covalent bonding between non-metal atoms</li> <li>Properties of simple covalent substances</li> <li>The structure of giant covalent allotropes, substances and fullerenes</li> </ul>	<ul style="list-style-type: none"> <li>The properties and uses of nanoparticles</li> <li>The structure, properties and uses of polymers</li> <li>The structure and properties of metals</li> <li>Comparison of states, structure and bonding of different chemical substances</li> <li>Linking bulk properties to the types of bonding, structures and intermolecular forces present</li> <li>Formulae and equations of elements, ionic and simple covalent substances</li> <li>Atomic radii, sizes of atoms and order of magnitude</li> </ul>	<ul style="list-style-type: none"> <li>Definition of relative atomic mass and relative formula mass</li> <li>Calculation of relative formula mass and percentage composition</li> <li>Empirical formula as its link to molecular mass</li> <li>The law of conservation of mass</li> <li>Mass changes in non-enclosed systems</li> <li>Definition of the mole and use of the Avogadro constant</li> <li>Calculation of the masses of atoms and molecules</li> <li>Stoichiometry</li> <li>Calculation of the masses of reactants or products</li> </ul>	<ul style="list-style-type: none"> <li>Exothermic and endothermic reactions</li> <li>Reaction profiles</li> <li>Definition of activation energy</li> <li>Energy change calculations using bond energies</li> <li>Definitions of oxidation and reduction</li> <li>Oxidising and reducing agents</li> <li>Using half equations to identify oxidation, reduction and redox</li> </ul>	<ul style="list-style-type: none"> <li>Definition of acids and alkalis and salts</li> <li>Neutralisation as the reaction of an acid with an alkali or base to form a salt and water</li> <li>Reactions of metals with acids</li> <li>Reactions of metal oxides with acids</li> <li>Reactions of metal carbonates with acids</li> <li>Reaction of acids and alkalis</li> <li>Acidity and the pH scale</li> <li>Strong and weak acids</li> <li>Concentrated and dilute solutions</li> <li>pH curves</li> </ul>	<ul style="list-style-type: none"> <li>Inert and non-inert electrodes</li> <li>Electrolysis of molten ionic compounds</li> <li>Electrolysis of aqueous solutions of ionic compounds</li> <li>Competing reactions in the electrolysis of aqueous solutions</li> <li>Physical properties of group 1 Alkali metals</li> <li>Chemical properties of group 1 metals</li> <li>Physical properties of group 7 Halogens</li> <li>Chemical properties of group 7 Halogens</li> <li>Halogen displacement reactions</li> </ul>
Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge
<ul style="list-style-type: none"> <li>Calculation of atomic number and mass number</li> <li>Comparing particle diagrams</li> <li>Drawing dot and cross for ionic compounds</li> <li>Drawing dot and cross diagrams for covalent substances</li> </ul>	<ul style="list-style-type: none"> <li>Calculation of surface area</li> <li>Calculation of surface area to volume ratio</li> <li>Expressing numbers using standard form</li> <li>Formulae of molecules and compounds</li> <li>Expressing quantities using standard form</li> </ul>	<ul style="list-style-type: none"> <li>Calculation of formula mass</li> <li>Calculation of percentage composition</li> <li>Mathematical link between empirical formula and molecular mass</li> <li>Using a balance to calculate masses</li> <li>Using formula masses to show</li> </ul>	<ul style="list-style-type: none"> <li>Labelling of reaction profiles</li> <li>Using a thermometer to calculate the temperature</li> <li>Calculation of sum of bond energies in reactants and products</li> <li>Calculation of energy change</li> <li>Writing half equations for oxidation and reduction</li> </ul>	<ul style="list-style-type: none"> <li>Using indicators to identify solutions as acidic, alkaline or neutral</li> <li>Identifying the formulae of salts formed by neutralisation</li> <li>Writing and balancing symbol equations</li> <li>Separation of salts from a mixture using filtration,</li> </ul>	<ul style="list-style-type: none"> <li>Link between electrode use conductivity and reactivity</li> <li>Identification of ions present in molten and aqueous solutions</li> <li>How to set up a chemical cell</li> <li>Representing reactions using half equations and overall equations</li> <li>Identifying and explaining trends in melting point, boiling point and</li> </ul>

<ul style="list-style-type: none"> <li>• Linking the state of a substance at a given temperature to its melting and boiling point</li> </ul>	<ul style="list-style-type: none"> <li>• Comparing quantities using standard form</li> </ul>	<ul style="list-style-type: none"> <li>• conservation of mass</li> <li>• Calculation of mass changes for reactions involving gases</li> </ul>	<ul style="list-style-type: none"> <li>• Writing equations to represent redox reactions</li> </ul>	<ul style="list-style-type: none"> <li>• crystallisation or evaporation</li> <li>• Using pH values to follow the progress of a reaction</li> </ul>	<ul style="list-style-type: none"> <li>• density</li> <li>• Identifying and explaining trends in reactivity</li> </ul>
Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)
Y11 Separate Chem KAT 1	Y11 Separate Chem Assessment 1	Y11 Separate Chem KAT 2	Y11 Separate Chem Assessment 2	Y11 Separate Chem KAT 3	Y11 Separate Chem Assessment 3



*At St Peter's we believe that a broad and balanced curriculum with a strong academic core is a right for all pupils. We seek to encourage pupils to explore subjects of interest around their in-school learning and to enhance their curriculum experience through enrichment.*

Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question	Unit of Work/Big Question
C4: Predicting and Identifying Reactions and Products	C4: Predicting and Identifying Reactions and Products C5: Monitoring and Controlling Chemical Reactions	C5: Monitoring and Controlling Chemical Reactions C6: Global Challenges	C6: Global Challenges	Exam Revision	
Knowledge	Knowledge	Knowledge	Knowledge	Knowledge	Knowledge
<ul style="list-style-type: none"> <li>Physical properties of group 0 elements</li> <li>Chemical properties of group 0 elements</li> <li>Physical properties of transition metals</li> <li>The reactivity series and metal displacement reactions</li> <li>Identifying gases</li> <li>Identifying cations and anions</li> </ul>	<ul style="list-style-type: none"> <li>Instrumental methods of chemical analysis</li> <li>Calculation of reaction rate</li> <li>Collision theory and catalysts</li> <li>Calculation of concentration</li> <li>Titration</li> <li>Volumes of gases at room temperature and pressure (RTP)</li> <li>Yield and atom economy</li> <li>Equilibria and Le Chatelier's Principle</li> </ul>	<ul style="list-style-type: none"> <li>The Haber and Contact processes as application of equilibria</li> <li>Production of fertilisers through the production of ammonium salts</li> <li>Extracting metals from ores and compounds (to include bioleaching and phytomining)</li> <li>Life-Cycle Assessments and the recycling of materials</li> <li>Types of materials and their uses</li> </ul>	<ul style="list-style-type: none"> <li>Alloys and corrosion</li> <li>Alkanes, alkenes, alcohols and homologous series</li> <li>Addition and condensation polymerisation</li> <li>Crude oil, hydrocarbons and cracking</li> <li>Fuel cells</li> <li>Atmosphere, Greenhouse Effect and Global Warming</li> <li>Pollutants and water treatment</li> </ul>	Exam Revision	
Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge	Skills & Procedural Knowledge
<ul style="list-style-type: none"> <li>Identifying trends in melting point and boiling point data</li> <li>Qualitative tests for gases</li> <li>Qualitative flame tests and precipitate tests to identify cations</li> <li>Qualitative precipitate tests to identify anions</li> </ul>	<ul style="list-style-type: none"> <li>Comparison of instrumental and manual methods of analysis</li> <li>Drawing tangents and calculation of gradients</li> <li>Use of pipettes, pipette fillers and burettes</li> <li>Converting volumes from <math>\text{cm}^3</math> to <math>\text{dm}^3</math></li> <li>Calculating concentrations in <math>\text{g}/\text{dm}^3</math> and <math>\text{mol}/\text{dm}^3</math></li> <li>Calculation of % yield and atom economy</li> <li>Explanation of compromise</li> </ul>	<ul style="list-style-type: none"> <li>The effect of changing conditions upon the position of equilibrium</li> <li>Writing and balancing equations</li> <li>Choice of material used based upon its properties and the amount of energy and water used in its production</li> <li>Ease of recycling and potential re-use of materials</li> </ul>	<ul style="list-style-type: none"> <li>Explaining how methods of preventing corrosion work</li> <li>Identifying the formulae and names of organic molecules</li> <li>Limitations of scientific evidence of how our atmosphere evolved and has changed over time.</li> </ul>		

	<b>conditions</b>				
Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)	Key Assessment Task (KAT)
<b>Y11 Separate Chem KAT 1</b>	<b>Y11 Separate Chem Assessment 1</b>	<b>Y11 Separate Chem Mock 1</b>	<b>Y11 Separate Chem Mock 2</b>		