



<p><b>Half Term 3: Chemical changes and Energy changes</b> <b>Substantive Knowledge:</b> <b>Electrolysis</b> Predict the products of molten binary ionic substances. Explain why a mixture is used as an electrolyte. Explain why the positive electrode must be replaced. Explain how ions become atoms at electrodes. Predict the products of aqueous solutions containing ionic compounds. <b>REQUIRED PRAC</b> – Describe the practical of aqueous ionic solutions. Describe the test for chlorine gas. <b>HIGHER</b> - Describe reactions using half equations.</p> <p>Draw and label exothermic reaction profile with activation energy, reactants, products and energy released. Draw and label an endothermic reaction profile with activation energy, reactants, products and energy absorbed. Identify examples of exothermic and endothermic reaction.</p> <p><b>Disciplinary Knowledge:</b> Analysis of data Describing a method Identifying variables HT HT – Calculate bond energies to identify exothermic or endothermic reactions.</p>		<p>Skim and Scan of source information Decoding terms Etymology of key terms</p>
		<p>Electrode, ions, Electrolyte, Cathode, Anode, Ions, Aqueous, Ionic, Atoms, compound Endothermic, Exothermic, Activation energy, Reactants, Products Catalysts, Overall energy change , Reaction profile, Rechargeable cells, Fuel cells, Chemical cells, Battery, Alkaline batteries</p>
		<p>Recall questions to start every lesson Recall test Review sheet</p>
		<p>Revision Card Recall test Review sheet Repetition of use of revision cards for end of unit assessment</p>
<p><b>Half Term 4:</b> <b>Energy changes Substantive Knowledge:</b> Describe a method on how to measure temperature change. T – Describe how a battery works, Interpret data evaluate the use of cells, Evaluate the use of hydrogen fuel cells in comparison to recharge cells and batteries, T (HT) – Write half equations for the electrode reactions in hydrogen fuel cells. <b>Quantitative Chemistry substantive knowledge</b> ALL: Describe the law of conservation of mass. Explain change in mass of a reactions. Explain any observed changes in mass in non-enclosed systems given the balanced symbol equation. Describe how chemical amounts are measured in moles, Describe the number of atoms, molecules or ions in a mole of a given substance is the Avogadro constant. <b>HIGHER CONTENT:</b> Use balanced symbol equations to calculate mass of reactants and products. Balance an equation given the masses of reactants and products. Describe with examples what is meant by a limiting reactant. Explain the effects of a limiting quantity of reactants on the amount of product. Describe how concentration of solutions can be measured. Explain how the mass of a solute and the volume of a solution is related to the concentration of the solution.</p> <p><b>Energy changes Disciplinary Knowledge:</b> Draw reaction profiles with and without catalysts <b>Quantitative Chemistry Disciplinary knowledge</b> write and balance symbol equations., calculate relative formula mass. calculate percentage by mass using relative formula masses, <b>HIGHER CONTENT:</b> how to calculate the mass of one mole of substance, how to calculate the number of moles in a given mass given the relative formula mass of a substance, Change the subject of a mathematical equation, calculate the mass of solute in a given volume of solution of known concentration</p>		<p>Skim and Scan of source information Decoding terms Etymology of key terms</p>
		<p>Actual yield, Atom economy, Avogadro constant, Avogadro’s law Concentration, Conservation of mass, Limiting reactant, Mole, Percentage by mass, Percentage yield, Relative formula mass, Theoretical yield, Thermal decomposition, uncertainty</p>
		<p>Recall questions to start every lesson Recall test Review sheet Term 2 assessment on units 1,2, and 4</p>
		<p>Revision Card Recall test Review sheet Repetition of use of revision cards for end of unit assessment</p>