Unit	Section	Content
Bonding, Structure and properties of matter	**5.2.2** How bonding and structure are related to the properties of a substance	-interpreting melting and boiling point data to determine state at a certain temp -link energy needed to change state to strength of forces between particles -state symbols -describe & explain properties of ionic compounds -describe & explain properties of simple covalent molecules -describe & explain properties of polymers -describe & explain properties of metals and alloys
Quantitative Chemistry	**5.3.2** Use of amount of substance in relation to masses of pure substances	-calculating relative formula mass -calculating the number of moles in a given mass of a substance, calculating the mass of a certain no. of moles of a substance -Avogadro's constant – the number of particles in 1 mole of every substance -calculate the masses of reactants and products from the balanced symbol equation and the mass of a given reactant or product. -using molar ratios to balance equations -identifying limiting reactants and explaining the effect on yield of products -define concentration of a solution -calculate the concentration of a solution, or the mass of a solute dissolved in a given volume to create a solution of given concentration
Chemical Changes	**5.4.1** The Reactivity of Metals	-Metals + oxygen -Reduction and oxidation in terms of oxygen -reduction and oxidation in terms of electrons -identify in a given reaction, symbol equation or half equation which species are oxidised and which are reduced -The Reactivity Series - Displacement reactions - Extraction of metals by reduction
	5.4.2 Reactions of Acids	-Naming Salts -products of the reactions of acids and metals -explain the reactions of metals and acids in terms of loss and gain of electrons -produces of the reactions of acids and alkalis and insoluble bases -products of the reactions of acids and metal carbonates -pH scale and neutralisation -difference between strong and weak acids
	5.4.2.3 and **Required Practical 8:** preparation of a pure, dry sample of soluble salts	-method of producing solid salt crystals from insoluble oxide or carbonate and acids -identifying errors in methods and reagents
	5.4.3 Electrolysis	-The process of electrolysis -identifying oxidation and reduction in terms of electrons -writing half equations for oxidation/reduction reactions occurring at each electrode -Electrolysis of molten ionic compounds -Electrolysis of aluminium oxide -Electrolysis of aqueous solutions, predicting products formed

	Required Practical 9: : investigate what happens when aqueous solutions are electrolysed using inert electrodes.	-Developing a hypothesis -Planning an investigation
Energy Changes	**5.5.1** Exothermic and endothermic reactions	-describe the law of the conservation of energy -define exo and endothermic reactions and describe their features -give examples of exo and endothermic reactions -define activation energy -represent exo and endothermic reactions with reaction profiles -describe bond breaking in the reactants as an endothermic process -describe bond formation in the products as an exothermic process -calculate the energy transferred in chemical reactions using bond energies supplied -Use energy change values to identify if a reaction is exo/endothermic
	Required Practical 10: investigate the variables that affect temperature changes in reacting solutions such as, eg acid plus metals, carbonates, neutralisations, displacement of metals	-Identifying independent, dependent, control variables -Analysing results -identifying exo and endothermic reactions from experimental results