

AQA Chemistry Paper 1		Covered in Lesson	Diagnosis			Revised		
C4.4 Chemical changes			R	A	G	1	2	3
4.4.1 Reactivity of metals	Describe how metals react with oxygen and state the compound they form, define oxidation and reduction							
	Describe the arrangement of metals in the reactivity series, including carbon and hydrogen, and use the reactivity series to predict the outcome of displacement reactions							
	Recall and describe the reactions, if any, of potassium, sodium, lithium, calcium, magnesium, zinc, iron and copper with water or dilute acids							
	Relate the reactivity of metals to its tendency to form positive ions and be able to deduce an order of reactivity of metals based on experimental results							
	Recall what native metals are and explain how metals can be extracted from the compounds in which they are found in nature by reduction with carbon							
	Evaluate specific metal extraction processes when given appropriate information and identify which species are oxidised or reduced							
4.4.2 Reactions of acids	HT ONLY: Describe oxidation and reduction in terms of loss and gain of electrons							
	HT ONLY: Write ionic equations for displacement reactions, and identify which species are oxidised and reduced from a symbol or half equation							
	HT ONLY: Explain in terms of gain or loss of electrons that the reactions between acids and some metals are redox reactions, and identify which species are oxidised and which are reduced (Mg, Zn, Fe + HCl & H ₂ SO ₄)							
	Explain that acids can be neutralised by alkalis, bases and metal carbonates and list the products of each of these reactions							
	Predict the salt produced in a neutralisation reaction based on the acid used and the positive ions in the base, alkali or carbonate and use the formulae of common ions to deduce the formulae of the salt							
	Describe how soluble salts can be made from acids and how pure, dry samples of salts can be obtained							
	Required practical 1: preparation of a pure, dry sample of a soluble salt from an insoluble oxide or carbonate using a Bunsen burner to heat dilute acid and a water bath or electric heater to evaporate the solution							
	Recall what the pH scale measures and describe the scale used to identify acidic, neutral or alkaline solutions							
	Define the terms acid and alkali in terms of production of hydrogen ions or hydroxide ions (in solution), define the term base							
	Describe the use of universal indicator to measure the approximate pH of a solution and use the pH scale to identify acidic or alkaline solutions							
	Chem ONLY: Describe how to carry out titrations using strong acids and strong alkalis only (sulfuric, hydrochloric and nitric acids to find the reacting volumes accurately							
	Chem & HT ONLY: Calculate the chemical quantities in titrations involving concentrations in mol/dm ³ and in g/dm ³							
	Chem ONLY: Required practical 2: determination of the reacting volumes of solutions of a strong acid and a strong alkali by titration							
	HT ONLY: Use and explain the terms dilute and concentrated (in terms of amount of substance) and weak and strong (in terms of the degree of ionisation) in relation to acids							
HT ONLY: Explain how the concentration of an aqueous solution and the strength of an acid affects the pH of the solution and how pH is related to the hydrogen ion concentration of a solution								
Describe how ionic compounds can conduct electricity when dissolved in water and describe these solutions as electrolytes								

4.4.3 Electrolysis	Describe the process of electrolysis							
	Describe the electrolysis of molten ionic compounds and predict the products at each electrode of the electrolysis of binary ionic compounds							
	Explain how metals are extracted from molten compounds using electrolysis and use the reactivity series to explain why some metals are extracted with electrolysis instead of carbon							
	Describe the electrolysis of aqueous solutions and predict the products of the electrolysis of aqueous solutions containing single ionic compounds							
	Required practical 3: investigate what happens when aqueous solutions are electrolysed using inert electrodes							
	HT ONLY: Describe the reactions at the electrodes during electrolysis as oxidation and reduction reactions and write balanced half equations for these reactions							