High Tunstall College of Science Curriculum Intent

Subject: Chemistry (Separate) Year: 10

Thread 3a – Chemical and energy change

	Chemistry Thread 3a	Progress		
Topic	**Key ideas**	**R**	**A**	**G**
Chemical and energy change	I can explain what metal oxides are and how they are formed			
	I can use observations of chemical reactions to produce a reactivity series, and can begin to link reactivity to the electron arrangement of atoms			
	I can explain what displacement is, and use this to consider how metals are extracted			
	I can explain what a neutralisation reaction is, and can explain in terms of ions why neutralisation occurs			
	I can predict the products of reactions involving acids, alkalis and bases, and can suggest whether the salts produced are soluble or insoluble			
	I can explain how to produce a dry sample of a soluble salt, and can demonstrate these skills practically			

Lesson	Learning Focus	Assessment	Key Words
1	What are metal oxides?	Production of word equations and balanced symbol equations	Metal oxides
2	Why are some metals more reactive than others?	Explanation of why alkali metal become more reactive as you descend the group, and application of this understanding	Reactivity
3	How are metals extracted?	Explanation of how different metals are extracted related to their position in the reactivity series	Displacement
4	What is neutralisation?	Production of balanced symbol equations that show products of neutralisation reactions	Neutralisation
5	How are salts formed?	Application of understanding to exam questions	
6	Required practical activity—Soluble salts	Safe production of a soluble salt	

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Thread 3b– Chemical and energy change

	Chemistry Thread 3b	Progress		
Topic	**Key ideas**	**R**	**A**	**G**
Chemical and energy change	I can describe the electrolysis of Lead Bromide			
	I can understand how reactivity and the presence of complex ions affects the products of electrolysis			
	I can describe, with half equations, the electrolysis of Bauxite and understand the need			
	I can describe the movement of electrons involved in the discharge			
	I can describe the key aspects of an endothermic and exothermic reaction. I can draw energy profile diagrams and label them. I can identify activation energy on these profiles.			
	I can write a method and construct a graph detailing an investigation in to energy changes during neutralisation.			

Lesson	Learning Focus	Assessment	Key Words
1	Process of electrolysis-an introduction (include Lead Bromide)	Exam question 6 mark extended	Cathode anode electrolyte
2	Electrolysis of molten and aqueous substances (include the riles of electrolysis and reactivity)	Exam questions Questioning practical	aqueous
3	Electrolysis to extract metals (Aluminium Oxide)	Exam questions including extended writing 6 mark	Bauxite cryolite
4	Oxidation and reduction in terms of electrons	Questions	OILRIG
5	Energy transfer during exo and endothermic reacitons	questioning	Exo & Endothermic
6	Reaction profiles (Endo and Exo)	Exam questions questioning	Activation Energy
7	RPA temperature changes	Exam questions Independently devising a method	Insulation Extrapolate neutralisation
8 & 9 & 10	Retrieval, test and feedback		