High Tunstall College of Science Curriculum Intent

Subject: Chemistry Year: 11

Thread 3 – Chemical and energy change

	Chemistry Thread 3a	Progress		
Topic	**Key ideas**	**R**	**A**	**G**
Chemical and energy change	I can explain the terms oxidation and reduction, and link this to electrons			
	I can explain the meaning of the terms 'strong' and 'weak' acid			
	I can explain what electrolysis is			
	I can explain how electrolysis is used to separate molten ionic substances, and consider this in terms oxidation and reduction using half equations			
	I can explain how the products formed from the electrolysis of aqueous solutions is dependent upon reactivity			
	I can explain how aluminium is extracted using electrolysis			
	I can use bond energy information to calculate the overall energy change in a reaction, and explain whether the reaction is exothermic or endothermic			

Lesson	Learning Focus	Assessment	Key Words
1	What are REDOX reactions?	Application of Redox reactions to ionic bonding	Redox, oxidation, reduction
2	What is the difference between strength and concentration?	Application of understanding to exam questions	Weak acid, strong acid, H+ ions
3	What is electrolysis, and how is this used to separate molten ionic compounds?	Annotation of electrolytic cell and identification of the elements produced	Electrolysis, molten, aqueous, current
4	How is electrolysis used to separate aqueous solutions?	Explanation of how electrolysis of aqueous solutions is different to molten solutions, and prediction of elements produced	Cathode, anode, aqueous, ions, current
5	How is aluminium extracted?	Production of fact file explaining how aluminium is extracted using electrolysis	Bauxite, cryolite, extraction
6	Required Practical Activity—Electrolysis	Completion of titration RPA	
7	How can we quantify energy change in chemical reactions?	Calculation of overall energy change in reactions, and classification of these as endothermic or exothermic based on the results	Bond energy, exothermic, endothermic