

Month	# of Days	Core Standard	Strand	Content	Skills	Activities	Assessments	Notes
Aug.	8	ORR26 C.1	Oxidation - Reduction Reaction	Electrolysis				
				Electrolysis- The electrolytic process introduction.	understanding the electrolysis process and its applications	Name some Electrolytes and non-electrolytes		pg 101-110 chemistry O level guide)
		ORR26 C.1		<ul style="list-style-type: none"> The electrolytic process 	describe electrolysis as evidence for the existence of ions		Research assignments regarding application of electrolysis	
				<ul style="list-style-type: none"> The electrolysis of aqueous solution 	predict the likely products of electrolysis	Draw and label parts of electrochemical cell (anode, cathode, flow of electrons, flow of ions)	Exercises pg 109	(pg 101-110 chemistry O level guide)
		ORR26 C.1		Experiment on electrolysis of water	Describe the chemical reactions in electrolysis.	Draw the set up for electroplating (voltaic cell)	Quiz	
				<ul style="list-style-type: none"> Electrolysis of dilute sulphuric acid using platinum electrodes. 		Electrolysis of water prediction and lab experiment	Strategic questioning	
				<ul style="list-style-type: none"> Experiment on electrolysis of dilute Sulphuric acid 		Homework: Describe the electrolysis of purified aluminium oxide dissolved in molten cryolite as the method of extraction of aluminium	Video Analysis	
				<ul style="list-style-type: none"> Electrolysis of purified aluminium oxide dissolved in molten cryolite 			Group Presentations (Posters, PPT, Video, etc...)	
				<ul style="list-style-type: none"> Electroplating 	Understanding the basic rules for electroplating	Video on copper electroplating	3-2-1 count down	3 things you didn't know

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					an object with a metal			before, 2 things that surprised you about this topic, 1 thing you want to start doing with what you've learned
				<ul style="list-style-type: none"> The electrolysis of aqueous solution 	predict the likely products of electrolysis	Draw and label parts of electrochemical cell (anode, cathode, flow of electrons, flow of ions)	Exercises pg. 109	(pg 101-110 chemistry O level guide)
Sept.	8	ORR 26 C.3		Production of electrical energy		Describing the production of electrical energy from simple cells		
				<ul style="list-style-type: none"> Exercises 				
		AB21 C.1		Acid, Base and Salt-			Research assignments on the uses of acids and base	Richard Harwood and Lan Lodge - cambridge IGCSE chemistry pg. 136-161
				<ul style="list-style-type: none"> what is an acid 	describe the terms, acid, alkali, indicators	Experiment: Identifying acids and bases	Strategic questioning	
		AB21 C1	Acid and Bases	Experiment on Investigating pH of common substances	Identify formulas as electrolytes , as acids and bases ; compare conductivity by counting		Video Analysis	

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		AB20 C.1	Acid and Bases		# of ions present in a formula			
				<ul style="list-style-type: none"> Acid and Alkali solutions 	Identify substances as acids and bases	Exercise: Acid and Alkali	End of the Unit questions	
				<ul style="list-style-type: none"> Metal oxides and Non-metal oxides 	understand acid rain	essay on acid rain	Research News article on acid rain	
				Experiment: Hydrolysis of salt		writing formulas of acids and bases	Group Presentations on characteristic reactions of acids with metals, alkali/base, metal carbonates	
		AB21 C.1	Acid and Bases	<ul style="list-style-type: none"> Acid reactions in everyday life 	Understndng the importance of acids in our body	Experiment: Color Change of Indicator	Home work	
				<ul style="list-style-type: none"> Alkalis and base 	Identifying the common alkalis	Experiment: Colour change of indicator in Acidic & Basic Solution		
		AB21 C.1	Acid and Bases			Write neutralization equations and predict resulting pH		
				<ul style="list-style-type: none"> Characteristic reactions of acids 	Compare values on pH scale and choose appropriate indicators	Exercise: What are the Characteristic reaction of the acids		

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Oct.	8	AB22 C.1	Acids & Bases	Experiment: Colour Change of Indicator	Compare strengths of acids /bases	Exercise: Acid and Alkali				
				● Acids and alkalis in chemical analysis	identifying the salts in common use	Essay: The importance of Salt				
				● salts	Identify the set-up for titration		worksheet on acid reactions in daily life-indigestion, soil pH and plant growth etc			
				Preparing soluble salts	Describe the importance of controlling pH in the soil		mid-term test			
				AB21 C.3	Acids & Bases	Experiment: Acid base titration	Identify causes and solutions of acid rain	Experiment: Preparation of soluble salt		
		Experiment: Preparation of soluble salt				Essay: what are the distinguishing characteristics of acid and bases				
				Strong and weak acids and Alkalis			Research and analysis	chemistry O level pg. 133		
				Nitrogen		Exercises: Draw the cycle of nitrogen				
		E24 C.4	Equilibrium	Nitrogen cycle	Understanding the general properties of ammonia	Discussion on why ammonia is used as a fertilizer	Describe the use of nitrogenous fertilizers in promoting plant growth and crop yield			

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Nov.	8	Content Stand ORR25 C.1	Oxidation-Reduction Reactions	Ammonia & Fertilizers- Harber Process				
				Experiment: Making a Fertilizer	Understanding why fertilizers are important for plants?	Essay: why fertilizers contain N, P and K?	3-2-1 count down	
				Ammonium nitrate and other fertilizers			Class test	
			Oxidation-Reaction Reactions	Potassium Fertilizer	Understanding types of fertilizers	Presentation	Class presentation-on good source of potassium, effects of excess Potassium in plants	
				Oxidation-Reduction Reaction		Identify species being oxidized and reduced		chemistry O level guide page 95
			Oxidation-Reduction Reactions	Oxidation-Reduction (Redox) reaction	Understanding the process of reduction and oxidation	Write half reactions making sure that # electrons lost = # electrons gained Write equation for rusting and other everyday examples of redox		
				Preliminary definitions- oxidations, Reductions, oxidation number	understand the role of oxidising and reducing agents	Write equation for rusting and other everyday examples of redox	worksheet on Redox reactions	

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		P4 C.3	Periodicity	Oxidising agents and reducing agents				
		ORR25 C.1	Oxidation-Reduction reactions	Metal Properties -uses and reactions				Conquering chemistry pg 115-pg 121
				4.9 Reactivity	Assign charges to elements in order to identify reactions as Redox	Define general terms	worksheet on reactivity of mentals	Exercises: 13-16 Page 120
Dec	4	S13 C.2.	Stoichiometry	<ul style="list-style-type: none"> ● 4.10 Oxidation and reduction and half reactions 	Define and deduce	Write the balanced chemical equations for the reactions of lithium with cold water, barium with cold water and magnesium with steam	Exercises: 17-20 Page 121	Exercises: 13-16 Page 120
				<ul style="list-style-type: none"> ● 4.11 An activity series 		worksheet on activity series	exercises: 21-25 Page 126	
		S13 C.2.	Stoichiometry	EXPERIMENT: SINGLE DISPMENT REACTION	Define and calculate	worksheet on Relative reactivity , periodic table and first ionisation energy	Enumeration type of Test: some Metals react with water or steam and others do not	
		S13 C.2.	Stoichiometry	<ul style="list-style-type: none"> ● 4.12 Relative reactivity , periodic table and first 	Understanding concepts		show their understanding by explaining	

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		S13 C.1.	Stoichiometry	ionisation energy			to the teacher the steps to calculating the oxidation numbers.	
				Quantitative aspects of formulae and equations				
				● 5.1 Relative atomic mass (atomic weight)	amount of substance & its relationship with mass	homework	Exercises: 1-4 page 133 and 134	Conquering chemistry pg 129-153
Jan.	8	S15 C.3	Stoichiometry	● 5.2 Relative molecular mass (molecular weight)	Define & calculate		worksheet on calculating relative atomic mass	
				● 5.3 Relative formula mass (formula weight)	deduce from molecular formula	exercises	Exercises: 5-17 Page 138	
		S12 C.2	Stoichiometry	● 5.4 The Mole	Understanding Avogadro's constant	exam style questions	worksheet on calculating molecular & formula mass	
				S12 C.4	● 5.5 Moles of gaseous elements	Deduce by using mole ratio	homework	class performance
		S12 C.4	Stoichiometry	● 5.6 Converting between mass, moles & numbers of atoms or molecules	Deducing - mass, moles & no. of atoms/ molecules		Exercises: 18-24 Page 139 on calculating moles	

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		GL17 C.1.	Stoichiometry	<ul style="list-style-type: none"> ● 5.7 Per cent composition 	understanding empirical and molecular formula	End of the unit exercises	presentation on how is % error determined from % yield?	
		GL17 C.1.	Gas Laws	<ul style="list-style-type: none"> ● 5.8 Calculating formulae from experimental data 	Mole Usage & Calculations	exam-style questions		
			Gas Laws	<ul style="list-style-type: none"> ● 5.9 Moles & chemical equations 				
Feb.	4	OC27 C.1.	Organic Chemistry	<ul style="list-style-type: none"> ● 5.10 Mass calculations from chemical equations 	Deducing mass		Exercises: 38-41 Page 148	
				<ul style="list-style-type: none"> ● 5.11 Yield and its importance for extracting metals 		end of the topic exercises	presentation on Real life application on %yield	
				Lab experiment: creating a solution of a certain mole concentrate			Discuss the importance of predicting yield in the identification, mining and extraction of commercial ore deposits and Justify the increase recycling of metals in our society and across the world	

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				<ul style="list-style-type: none"> 5.13 Volumes of gases in reactions 		worksheets / discussions	exercises: 42-44 Page 152	
Mar.	8	OC27 C.1	Organic Chemistry	Organic Chemistry				
		OC27 C.1	Organic Chemistry	The unique properties of carbon	Able to discuss and enumerate the properties of carbon	Draw and name alkanes, alkenes, alkynes and aromatics (benzene, toluene)	worksheet on drawing /naming organic compounds	Quick-check Question 1- 7 Page 290
		OC27 C.1	Organic Chemistry	Alkanes	Able to name and draw the structures of the first six alkanes	Homework: Draw a diagram of the arrangement of the electrons in the bonding of methane, showing just the outer (valency) electrons.	Quick-check Question 1- 7 Page 291	
		OC27 C.1	Organic Chemistry	Burning Alkanes	able to draw the structure of the first three alkenes, and the bonding in ethene	Draw, distinguish between saturated and unsaturated organic compounds	Quick-check Question:1-6 Page 292	Quick-check Question:1-6 Page 292
		OC27 C.1	Organic Chemistry	Alkenes	understand difference between alkanes and alkenes./ understand the process of hydrogenation	Research on saturated and unsaturated hydrocarbons, and their effects Draw structures with the functional groups health.	Essay type of Exercises: What are the two different carbon-containing molecules that are important for living organism.	
		OC27 C.1	Organic Chemistry	EXPERIMENT: MAKING	naming alkanes,	exercises: write a word	Essay type of	

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		OC27 C.1 OC28 C.1	Organic Chemistry	SOAP IN THE LABORATORY	alkenes, alkynes	equation for the reaction between ethene and bromine water	Exercises: What are the two different carbon-containing molecules that are important for living organism.	
				chemical test for unsaturation	Name the different homologous series	Identifying functional groups-	quiz-identifying functional groups	
				Hydrocarbon structure and isomerism	Understanding Isomerism and their types	Draw structures with the functional groups	Worksheet on isomers	
Apr.	4	OC28 C.1	Organic Chemistry	chemical reaction of Alkanes	Identify functional groups	class work on Identifying functional groups	3-2-1 count down	
				Chemical reaction of Alkenes	Understand the different chemical reactions of the Alkene and its uses			
				Alcohols	Understanding concepts		Research work on the uses of alkenes	
May	6	OC28 C.1	Organic Chemistry Organic Chemistry	making ethanol		Unsaturation in fats and oils experiment		
		OC29 C.2		The reactions of ethanol	understanding organic reactions	making Poster on alcohol	Final test	Final test
		OC29 C.2		Alcohol and health		Essay type of test: Why it is not possible to set fire to the contents of a bottle of wine	Research on biofuels	Richard Harwood - Cambridge IGCSE

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		OC29 C.2	Organic Chemistry	Organic acids and esters	name and draw the first two carboxylic acids	Exercises: write a word equation for the reaction between ethanol and ethanoic acid	Identify examples of these reactions	chemistry pg. 285-305 Identify examples of these reactions
		OC29 C.2	Organic Chemistry	Esterification	Identifying the smells of different esters	Brainstorming: what other class of compound contains the ester linkage		