

PiXL 6: Subject: Chemistry **Examination Board: AQA** Specification Code: 7404 Section: 1 Physical chemistry Key: Secure at Target Insecure at Target Grade No Knowledge at Target Grade Students' Target ALPS + 1 Fine Levelled Grades Atomic structure tate the relative masses or protons, neutrons and electrons tate the relative charges of protons, neutrons and electrons xplain how these particles are arranged in an atom terfine the terms mass number, atomic number and isotope Define the terms mass number, atomic number and iostope (spain why iostopes of the same element have identical chemical properties bescribe how electrons are arranged in an atom Recognise that the electron can behave as a particle, a weee, or a cloud of charge bescribe how the structure of an atom developed from Dalton to Schrodinger spain how a mass spectrometer works and what it measures lustrate how the electron configuration of atoms and form are written in terms of s, p and d electrons State the definition of ionisation energy
Describe the trend in ionisation energies a) down a group and b) across a period in terms of electron configurations explain how trends in ionisation energies provide evidence for the existence of energy levels and sub-leve Amount of substance
State the definition of relative atomic mass
State the definition of relative molecular mass
State the meaning of Avogadro constant tate the meaning or worganic Constant.

At the what the same numbers of moles of different substances have in common alculate the number of moles present in a given mass of an element or compound alculate the number of moles of substance from the volume of a solution and its con actions the hollmost of moles of substance from the volume of a solution and its concernal tate the ideal gas equation lescribe how the ideal gas equation is used to calculate the number of moles of a gas at a gir ressure State the definitions of emperical formula and molecular formula

Calculate the emperical formula from the masses or percentage masses of the elements present in a co calculate the additional information needed to work out a molecular formula from an emperical for bemonstrate how an equation can be balanced in the reactants and products are known calculate the amount of a product using experimental data and a balanced equation excribe the atom economy of a chemical reaction vessure une suom economy of a chemical reaction tate how an equation is used to calculate an atom economy bescribe the percentage yield of a chemical reaction alculate percentage yields Bonding State how ions form and why they attract each other State how Jons form and why they attract each other
State how Jons form and why they attract each other
State he properties of onicially bonded compounds
Describe the structure of lonically bonded compounds
Describe a covering the structure of lonically bonded compounds
Describe as covering the structure of lonically bonded molecules
Describe he nature of bonding in metals
Describe he nature of bonding in metals
Describe the surface of metals
Specific his organizer of metals
State than the some structure of lonical structure of exception how displayed fiscels and varied revitable forces arise secretion how displayed revitable forces affect to follow the secretion how varied revitable forces affect to follow the take what is needed for hydrogen bonding to occur spalson why Mfs\_h\_0 and have higher bolling temperatures than might be expected tate the rules the flay govern the shapes of simple molecules. escribe what happens to the shape of the molecule when a bonding pair of electrons is replaced by a non-bonding pair tate the energy changes that occur when solids melt and liquids vaporise xplain the values of enthalpies of melting (fusion) and xaporisation are xplain the physical properties of ionic solids, metals, macromolecular solids and molecular solids in terms of their detail Explain the physical properties of ionic solids, metals, macron structures and bonding List the three types of strong bonds List the three types of intermolecular forces Describe how releting temperatures and structure are related bescribe how extended conductivity a related to bonding frengetics.

Online the List is sendothermic and snothermic Define what an enthalpy change is Describe what an enthalpy level diagram is Describe how enthalipy change is measured in a reaction bescribe how you measure enthalipy changes more accurately bescribe how you measure enthalipy changes in solution bescribe how too find enthalipy changes in solution bescribe how to find enthalipy changes that cannot be measured directly beach blastic time. Kinetics
Describe what must happen before a reaction will take place
Explain why all collistions do not result in a reaction
Define activation energy Explain how temperature affects the number of molecules with energy equal to or more than the activation energy. Explain why a small increase in temperature has a large effect on the rate of a reaction State the definition of a catalyst. Describe how a cateron a mission of processing to the processing of the processing o lescribe how a catalyst affects activation energy lescribe how a catalyst affects enthalpy change Epalain how Le Chateller's principle can predict how changes in conditions become how the equilibrium constant in affected by changing the condition Oxidation, reduction and redor reactions Define a radio reaction in terms of oxygen or hydrogen transfer Define a radio reaction in terms of electron transfer Define a radio reaction in terms of electron transfer Define an oxidation table Describe how calculations. The condition table is perceived by the condition table are worked out Evaluan thoral fall reconsiders and used on balance an equation Describe how calculations from a redoir equation Describe him equations from a redoir equation



PiXL 6:																						
Subject: Chemistry																						
Examination Board: AQA																						
Specification Code: 7404																						
Section: 2 Inorganic chemist	rv																					
<b>0</b>																						
		Dat	e v	ou	ha	ive	rev	iev	ved													
		T	ΓÍ	Ť	П	Ť	ŤΤ	Ť	П	Т	П		ТТ	Т	П	Т	П	Т	П	Т	Т	П
																						ıl
																						ıl
Key:	Secure at																					ı
Target Grade	Insecure at Target																					ı
Grade	No Knowledge at Target																					.
Grade	No knowledge at Target																					
Grade	-	-		+	+		++	+	++				+	+	+		H		+	+	-	-
Studen	its' Target ALPS + 1 Fine Levelled Grades																					ı
Periodicity																						
State the location of the s, p and d blocks of elements in the	he Periodic Table																					
Describe the trends in melting and boiling temperatures of	of the elements in Period 3																					
Explain these trends in terms of bonding and structure							$\perp$						$\perp$						$\perp$			$\vdash$
Describe the trends in atomic radius and first ionisation er		_					44	_	11				44	_			Ш			_		$\vdash$
Explain the trends in atomic radius and first ionisation en		-		-	+	-	++	-	+++				+	-	+++		+		+	-	+	$\vdash$
Explain why the increase in ionisation energies across a per Describe how successive ionisation energies explain electric		_		_	+		+	_	+	_	+		+	_	+		+		+	_	+	$\vdash$
Group 2: the alkaline earth metals	on arrangements				+		++	-	++				+	-			++			+		-
Explain the changes in the atomic radius of the Group 2 el	ements from Mg to Ba		H	+			$\dagger \dagger$	+	$^{+}$				tt	+		+	Ħ	+	$^{\dagger}$	+		ΠŤ
Explain the changes in the first ionisation energies of the G																						П
Explain the changes in the melting points of the Group 2 of	elements from Mg to Ba				+		++	-	++				+	-			++			+		-
State the trend in reactivity of the group	contents with mg to bu				$\Box$		+						T							+		πĦ
State the trend in solubilities of a) the hydroxides and b) the	he sulphates																					
Group 7(17): the halogens																						iΠ
Explain how and why the atomic radius changes in Group													ш									ш
Explain how and why electronegativity changes in Group 7	7 of the periodic table												ш									$\perp$
State the trend in oxidising ability of the halogens		$\perp$	Н	_	+	_	++	_	+	_	+		+	_	+	-	$\sqcup$	-	+	-	1	$\vdash$
Describe the experimental evidence that confirms this tre	nd			_	$\perp$	_	+	_	$\perp$	_	+		+	_	$\perp$	-	$\vdash$	-	+	_	+	+
State the trend in reducing ability of halide ions		+	H	+	+	_	++	_	++	_	+		+	_	+	-	$\vdash$	-	+	_	-	$\vdash$
Explain how this trend is linked to ionic radius		+	H	+	+	+	++	+	+	+	+	-	+	+	+	-	+	-	+	+	+	+
Describe how halide ions are identified using silver nitrate Describe how chlorine reacts with water		+	H	+	+		++	_	++		+		+	_	+	-	++	-	+	_	+	$\leftarrow$
Describe how chlorine reacts with water  Describe how chlorine reacts with alkali			$\vdash$		1		+	+	+		+ -		+ +		+		+ +	+	+	_	+-	+



PiXL 6:																		
Subject: Chemistry																		
Examination Board: AQA																		
Specification Code: 7404	-																	
Section: 3 Organic chemistry																		
Section: 5 Organic chemistry																		
	Dat	e y	/οι	ı ha	ave	rev	iew	ed		 								
Keyr.																		
Key: Secure at Target Grade Insecure at Target																		
Grade No Knowledge at Target																		
Grade																	Ш	
Students' Target ALPS + 1 Fine Levelled Grades																	Ш	
Introduction to organic chemistry  State what is meant by the terms empirical formula, molecular formula, skeletal formula and structural formula				+			+			+				+	+	+	$\vdash$	++
Explain the IUPAC rules for naming alkanes and alkenes State what is meant by a functional group						$\blacksquare$				$\blacksquare$					$\vdash$		H	
State what is meant by a homologous series																	ш	
State what is meant by structure isomers Describe the three ways in which structural isomerism can occur																	Ħ	
Alkanes State the definition of an alkane																	H	-
Explain how alkanes are named  Describe the properties of alkanes															+	+	$\vdash$	-
State the origin of crude oil																	H	-
Explain how crude oil is separated into useful fractions on an industrial scale  Describe what cracking is															+	+	$\vdash$	-
Describe what the conditions and products of thermal cracking are Describe the conditions and products of catalytic cracking																		
Explain the economic reasons for cracking										П							ø	
Describe what a fuel is Explain why alkanes are good fuels										Ш							Ħ	
Describe the environmental problems associated with the used of alkanes as fuels Describe how these problems may be tackled																	H	
Define what a free radical is  Describe the reaction for the free-radical substitution of methane				+	H					+	-				+	+	H	+
Halogenoalkanes Explain why halogenoalkanes are more reactive than alkanes															$\vdash$		H	
Explain why carbon-halogen bonds are polar Explain the trends in bond enthalpy and bond polarity of the carbon-halogen bond										H							H	$\Box$
State the definition of a nucleophile																	ш	
Describe nucleophilic substitution  Explain why OH, CN and HN <sub>3</sub> behave as nucleophiles				T						Ħ						T	H	-
Descibe the mechanism for nucleophilic substitution State the definition of an elimination reaction										Н							F	
Describe the mechanism for elimination reaction in halogenoalkanes																	ш	
Describe the conditions that favour elimination rather than substitution Show when and how isomeric alkenes are formed																		
Alkenes Define an alkene																	H	+
Describe the isomerism that alkenes display Explain why they are reactive				+						+				-	+	+	$\vdash$	
Describe eletrophilic addition reactions Outline the mechanism for these reactions																	H	
Describe an addition polymer Explain what sort of molecules readt to form addition polymers																	F	
Explain What sort or molecules readt to form addition polymers  Alcohols  State the general formula of an alcohol																	茸	
Describe how alcohols are classified																	Ħ	+
Describe the physical properties of alcohols  Describe how ethanol is produced by fermentation				+	H					+	-				+	+	H	+
Describe the economic and environmental advantages of producing ethanol by fermentation  State what is meant by the term biofuel				-													H	
State the products when primary, secondary and tertiary alcohols are oxidised  Explain how the oxidation of primary alcohol is controlled																	H	
State what is meant by aldehyde and ketones				T											Ħ	T	П	+
Describe how a mild oxidising agent can be used to distinguish between and aldehyde and a ketone Describe what an elimination reaction is	H	H								H			H		H		H	
Describe what an elimination reaction is Describe how alcohols are dehydrated to for alkenes Organic analysis	H	H	1	t	Ħ					Ħ	t		Ħ		Ħ		F	#
Describe how organic proups can be identified		H			Ħ					H		Ħ			Ħ		曲	
State what is meant by the term molecular ion Describe what the mass of a molecular ion can show					H		$\blacksquare$			Н		H			Н		H	
Explain what a high resolution mass spectrum can tell us  Describe how the absorption of infrared radiation can be used to indicate the presence of certain functional groups in an	H	H	-  -	+	H		+1	+		H		H	+	+	H		$\vdash$	+
organic molecule State what the fingerprint region is and where it is found	$\vdash \vdash$	H	-	+	$\dashv$	+	+	+	+	$\dashv$	+	$\vdash$	+		Н		$\vdash$	+
Describe how infrared spectroscopy can be used to confirm the identity of a compound	H	H	1	t	Ħ					Ħ	t		Ħ		Ħ		F	$\bot$
Explain how an infrared spectrum can be used to show the presence of impurities					H			$\perp$		Ш		H			H		止	$\pm \pm$



PiXL 6:																				
Subject: Chemistry																				
Examination Board: AQA																				
Specification Code: 7404																				
Section: 5 Skills in A level chem	istry																			
		Da	te	you	ı h	ave	re	vie	w	ed										
		Ī			Ī		T	Ī		Ī										
Key:	Secure at																			
Target Grade	Insecure at Target																			
Grade	No Knowledge at Target																			
	No knowledge at Target																			
Grade																			Ш	
Students'	Farget ALPS + 1 Fine Levelled Grades																			
Mathematical skills												П								
I can use correct Units																			П	T
I can use and convert to standard form																				
I can convert to base units																			Ш	
I can use and understand prefixes and suffixes of units																			Ш	
I can correct to the correct number of significant figures																			Ш	
I can change the subject of an equation																			Ш	
I can substitute into equations																			Ш	
I can interpret graphs																			Ш	
I can draw graphs correctly																			LТ	
I can find the rate of a reaction from a graph							Ī			Ī									ıΤ	
I can use tangents in order to calculate the rate of a reaction fro	m a graph		Т		T		T	İ	П	T	T	П		m	П	T		П	П	
I can use and interpret logarithms					T			i									T			
I can calculate and interpret angles			Т		T		T	İ	П	T	T	П		П	П	T		П	П	
I understand how angles are represented in diagrams depending	and the standard and state the analysis of		-1-		_			_					 1		1 1		1	1 1	-	$\neg$