Personalised Learning Checklists Edexcel Combined: Chemistry Paper 2

Edexcel (combined) Chemistry Topics (1SC0) from 2016 - Paper 2 (Topics C6&7)				
Topic	**Student Checklist**	**R**	**A**	**G**
Topic 6 – Groups in the periodic table	Explain why some elements can be classified as alkali metals, halogens or noble gases, based on their position in the periodic table			
	Recall the physical properties of alkali metals			
	Describe the reactions of lithium, sodium and potassium with water			
	Describe the pattern in reactivity of the alkali metals, lithium, sodium and potassium, with water; and use this pattern to predict the reactivity of other alkali metals			
	Explain this pattern in reactivity in terms of electronic configurations			
	Recall the colours and physical states of chlorine, bromine and iodine at room temperature			
	Describe the pattern in the physical properties of the halogens, chlorine, bromine and iodine, and use this pattern to predict the physical properties of other halogens			
	Describe the chemical test for chlorine			
	Describe the reactions of the halogens, chlorine, bromine and iodine, with metals to form metal halides, and use this pattern to predict the reactions of other halogens			
	Recall that the halogens, chlorine, bromine and iodine, form hydrogen halides which dissolve in water to form acidic solutions, and use this pattern to predict the reactions of other halogens			
	Describe the relative reactivity of the halogens chlorine, bromine and iodine, as shown by their displacement reactions with halide ions and use this to predict the reactions of astatine			
	HT ONLY: Explain why these displacement reactions are redox reactions in terms of gain and loss of electrons, identifying which of these are oxidised and which are reduced			
	Explain the relative reactivity of the halogens in terms of electronic configurations			
	Explain why the noble gases are chemically inert, compared with the other elements, in terms of their electronic configurations			
	Explain how the uses of noble gases depend on their inertness, low density and/or non-flammability			
	Describe the pattern in the physical properties of some noble gases and use this pattern to predict the physical properties of other noble gases			
Topic 7 - Rates of reaction and energy changes	*Core Practical: Investigate the effects of changing the conditions of a reaction on the rates of chemical reactions by: measuring the production of a gas/observing a colour change*			
	Suggest practical methods for determining the rate of a given reaction			
	Explain how reactions occur by discussing the collision theory			
	Explain the effects on rates of reaction of changes in temperature, concentration, surface area to volume ratio and pressure in terms of frequency and energy of collisions			
	Interpret graphs of mass, volume or concentration of reactant or product against time			
	Describe what a catalyst is			
	Explain how the addition of a catalyst increases the rate of a reaction in terms of activation energy			
	Recall that enzymes are biological catalysts and that enzymes are used in the production of alcoholic drinks			
	Recall when chemical changes occur that they cause changes in heat energy			
	Describe the differences between endothermic and exothermic in terms of energy taken in or given out			
	Recall if bonds are broken or made for each of the following reactions: endothermic and exothermic			
	Describe why the overall heat energy change for a reaction is exothermic or endothermic in terms of bonds being made or broken			
	HT ONLY: Calculate the energy change in a reaction given the energies of bonds (in kJ mol^{-1})			
	Explain the term activation energy			
	Draw and label reaction profiles for endothermic and exothermic reactions, identifying activation energy			

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Edexcel (combined) Chemistry Topics (1SC0) from 2016 - Paper 2 (Topic C8)				
Topic	**Student Checklist**	**R**	**A**	**G**
Topic 8 – Fuels and Earth science	Recall what a hydrocarbon is			
	Describe and explain what crude oil is and why it is important			
	Describe and explain the separation of crude oil into simpler, more useful mixtures by the process of fractional distillation			
	Recall the names and uses of the following fractions: gases, petrol, kerosene, diesel oil, fuel oil and bitumen			
	Explain how hydrocarbons in different fractions differ from each other in terms of boiling point, number of C & H's, flammability and viscosity			
	Explain what a homologous series of hydrocarbon compounds is			
	Describe the complete combustion of hydrocarbon fuels including energy changes and products			
	Explain why the incomplete combustion of hydrocarbons can produce carbon and carbon monoxide			
	Explain how carbon monoxide behaves as a toxic gas			
	Describe the problems caused by incomplete combustion in appliances that use carbon compounds as fuels			
	Explain how impurities in some hydrocarbon fuels result in the production of sulfur dioxide			
	Explain some problems associated with acid rain			
	Explain why, when fuels are burned in engines, oxides of nitrogen are formed and that they are pollutants			
	Evaluate the advantages and disadvantages of using hydrogen, rather than petrol, as a fuel in cars			
	Recall the names and sources of some renewable fossil fuels			
	Explain what cracking is and why it is necessary			
	Recall that the gases produced by volcanic activity formed the Earth's early atmosphere			
	Describe what the Earth's early atmosphere was thought to contain			
	Explain what the oceans were formed from			
	Explain why the amount of carbon dioxide in the atmosphere decreases when the oceans were formed			
	Explain how the growth of primitive plants changes the composition of gases in the atmosphere			
	Describe the chemical test for oxygen			
	Describe and explain the greenhouse effect and name the gases that contribute to it			
	Evaluate the evidence for human activity causing climate change			
	Describe the potential effects on the climate of increased levels of carbon dioxide and methane generated by human activity			
	Describe how effects on the climate may be mitigated: consider scale, risk and environmental implications			