Kings Langley School
Unlocking Potential for Life

I can do statements
KS4 - Year 11
Chemistry

Student Knowledge and Skills Tracker for Year 11 Chemistry

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C8 Rates and equilibrium	Check 1	Check 2	Check 3	Check 4
I can explain how there can be different units for measuring rate of reaction.				
I can calculate the mean rate of reaction.				
I can calculate the rate of reaction at a specific time.				
I can describe how changing the surface area changes the rate of reaction.				
I can describe what the activation energy of a reaction is.				
I can calculate the surface area to volume ratio.				
I can use collision theory to explain how changing temperature alters the rate of reaction.				
I can calculate mean rates of reaction.				
I can use collision theory to explain how changing concentration or pressure alters the rate of reaction.				
I can calculate mean rates of reaction.				
I can explain how to change gas pressure.				
I can use collision theory to explain how adding a catalyst alters the rate of reaction.				
I can explain, with an example, the industrial use of a catalyst.				
I can calculate the mean rate of reaction.				
I can explain, using a familiar reaction, how a reaction can be reversible.				
I can describe a familiar reversible reaction using a balanced symbol equation.				
I can predict the observations of a familiar reversible reaction when the conditions are changed.				
I can explain why the energy change in a reversible reaction is exothermic in one direction and endothermic in the reverse direction.				
I can generate balanced symbol equations for reversible reactions from information provided.				
I can make predictive observations of familiar reversible reactions when information is supplied.				

I can describe how to achieve dynamic equilibrium.				
I can describe how the rate of the forward reaction compares to the rate of the backward reaction in dynamic equilibrium.				
I can describe Le Chatelier's Principle.				
I can explain how changing conditions for a system at dynamic equilibrium affects the rate of the forward and reverse reactions.				
I can predict the effect on yield of changing temperature, concentration, or pressure in a given equilibrium system.				

C9 Crude oil and fuels	**Check 1**	**Check 2**	**Check 3**	**Check 4**
I can describe how to separate crude oil into fractions in a school laboratory.				
I can classify a hydrocarbon as an alkane.				
I can state the names and describe the first four alkanes.				
I can describe how the trend in colour, viscosity, flammability, and boiling point changes as the length of the hydrocarbon chain changes.				
I can describe how the properties of a fraction of crude oil make it appropriate for its use.				
I can explain the differences between complete and incomplete combustion.				
I can write balanced symbol equations for the complete and incomplete combustion of hydrocarbons.				
I can explain how to test for the products of complete combustion.				
I can describe the process of cracking, including conditions.				
I can generate a balanced symbol equation to describe cracking.				
I can describe a chemical test to show an alkene is present.				

C12 Chemical analysis	Check 1	Check 2	Check 3	Check 4
I can describe the difference between pure substances, impure substances, and formulations.				
I can explain how melting point and boiling point data can be used to determine the purity of a substance.				
I can state uses of formulations.				
I can explain how chromatography separates solutes.				
I can calculate Rf values from given data.				
I can use a chromatogram to determine if a sample is pure or impure.				
I can explain why limewater turns milky when it reacts with carbon dioxide.				
I can interpret results to identify a gas that is present.				
I can explain why hydrogen 'pops' near a naked flame.				

C13 The Earth's atmosphere	Check 1	Check 2	Check 3	Check 4
I can state the composition, including formulae, of the Earth's early atmosphere.				
I can describe a theory for the development of the Earth's atmosphere.				
I can explain, using word equations, how gases were formed in the atmosphere and oceans were formed.				
I can describe how the proportion of carbon dioxide in the early atmosphere was reduced.				
I can state the composition of dry air.				
I can use word equations to show how carbon dioxide can form sedimentary rocks.				
I can explain the greenhouse effect.				
I can explain how greenhouse gases increase the temperature of the atmosphere.				
I can explain how human activity can change the proportion of greenhouse gases in the atmosphere.				
I can explain the possible effects of global climate change and why they are difficult to predict.				

I can explain possible methods to reduce greenhouse gas emissions.				
I can explain some of the problems in trying to reduce greenhouse gas emissions.				
I can explain how sulphur dioxide and nitrogen oxides are made when fossil fuels are combusted.				
I can describe the health impacts of atmospheric pollutants.				
I can use balanced symbol equations to show how atmospheric pollutants are formed.				

C14 The Earth's resources	**Check 1**	**Check 2**	**Check 3**	**Check 4**
I can describe and classify a resource as finite or renewable when information is given.				
I can explain the use of natural, sustainable, and finite resources.				
I can interpret information from different formats including graphs, charts, tables, and prose.				
I can explain the method of obtaining potable water depends on the local conditions.				
I can explain reasons for filtration and sterilisation in water treatment.				
I can describe and explain in detail how to safely distil salty water.				
I can explain why waste water should be treated before it is released into the environment.				
I can describe the main processes in sewage treatment.				
I can explain the uses of sewage slurry.				
I can describe the processes of phytomining and bioleaching.				
I can write balanced symbol equations to explain metal extraction techniques.				
I can explain the need for new ways of extracting metals (in particular copper).				
I can explain the importance of LCA and how it can be misused.				
I can carry out LCAs for different products when data is supplied.				
I can explain the importance of reusing and recycling products.				
I can explain why some recycling can be difficult.				