



Year 10 Chemistry Curriculum Summary

**YEAR GROUP: 10 LETCH****SUBJECT: Chemistry**

When?	Knowledge	Understanding	Assessment
Rates of Reaction	<p>Be able to:</p> <ul style="list-style-type: none">Be able to define and calculate the rate of reaction.Be able to state and explain theory behind the factors that affect the rate of reaction.Be able to carry out practical investigations to show how the factors affect the rate of a reaction.	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Rates of Reaction key vocabulary: activation energy catalyst climate change collision theory precise / precision</p>	Rates of Reaction Test
Energy Changes	<p>Be able to:</p> <ul style="list-style-type: none">Be able to describe and explain exothermic and endothermic processes.Be able to draw energy profile diagrams for exothermic and endothermic processes, including activation energy.Be able to calculate bond enthalpies for different reactions.	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Energy Changes key vocabulary: activation energy bond energy endothermic exothermic</p>	Energy Changes Test
Organic Chemistry	<p>Be able to:</p> <ul style="list-style-type: none">Describe how crude oil is separated and processed using fractional distillation and cracking.Describe the process of combustion as well as the products and their affects on the environment.Describe the properties of fractions	<p>Students will carry out a range of practical experiments during these topics.</p> <p>Organic Chemistry key vocabulary: alkane alkene cracking</p>	Organic Chemistry test



	<p>and their general formula (Alkanes and Alkenes).</p>	<p>distillation double bond flammable fraction fractional distillation general formula hydrocarbon mixture oxidised saturated hydrocarbon thermal decomposition unsaturated hydrocarbon viscosity</p>	
<p>Chemical changes</p>	<p>Be able to:</p> <ul style="list-style-type: none"> • Use the reactivity series to describe the reactivity of metals with water and acids. • Describe and explain the method for making salts from different substances. • Describe how metals are extracted from their ores based on their reactivity. 	<p>Students will carry out a range of practical experiments during these topics.</p> <p>: Chemical changes key vocabulary: acid alkali base displacement reaction electrolysis half equation ionic equation metal ore neutral neutralisation ore oxidation/oxidised reactivity series reduction / reduced strong acids</p>	<p>Chemical changes Test</p>
<p>Electrolysis</p>	<p>Be able to:</p> <ul style="list-style-type: none"> • Describe how electrolysis works in molten and aqueous conditions. 	<p>Students will carry out a range of practical experiments during these topics.</p>	<p>Electrolysis Test</p>



	<ul style="list-style-type: none">• Predict the products at the anode and cathode• Write half equations for oxidation and reduction	: Electrolysis key vocabulary: anode brine cathode electrolyte half equation inert	
Quantitative Chemistry	Be able to: <ul style="list-style-type: none">• Describe and explain the conservation of mass and the loss of mass for experiments using gases.• Calculate M_r, % composition, uncertainty and moles.• Use the mole equation to calculate reacting masses, concentration of solutions and balancing equations.	Students will carry out a range of practical experiments during these topics. Quantitative Chemistry key vocabulary: Avogadro constant limiting reactant mole relative atomic mass A_r relative formula mass M_r	Quantitative Chemistry Test
Chemistry of the Atmosphere	Be able to: <ul style="list-style-type: none">• Describe and compare the composition of the early and current atmosphere.• Describe and explain the affects of climate change• Describe different pollutants affects.	Students will carry out a range of practical experiments during these topics. Chemistry of the Atmosphere key vocabulary: atmosphere carbon capture and storage carbon footprint global dimming incomplete combustion nitrogen oxides particulate	: Chemistry of the Atmosphere Test