

Chemistry Long Term Programme of Study Year 10

Temperance Term

W/C	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	HALF TERM
Area of Study	C4 – Chemical Changes							
Core Learning	C4 – Investigate and predict chemical changes in substances -Explain oxidation and reduction in terms of loss or gain of oxygen -Experiment and describe reactions of metals with water and dilute acids -Interpret and evaluate metal extraction processes -Explain oxidation and reduction in terms of loss and gain of electrons. -Write ionic equations for displacement reactions. -Explain reactions of acids with metals -Predict products from given reactants -Use the pH scale to identify acidic or alkaline solutions -Describe and explain the process of electrolysis -RP Investigate the electrolysis of aqueous solutions -Write half equations							
Opportunities for Challenge	Explain any observed changes in mass in non-enclosed systems during a chemical reaction given the balanced symbol equation for the reaction and explain these changes in terms of the particle model.							
Assessment	End of Topic Test							

W/C	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	CHRISTMAS
Area of Study	C3 – Quantitative Chemistry						
Core Learning	C3 – Use chemical equations as a way to communicate chemical ideas. -Define 'conservation of mass' -Calculate relative formula mass and percentage mass. -Investigate mass changes -Make estimations of uncertainty -Understand the term 'moles' and calculate moles in a given mass of a substance. -MS1b express data in standard form -MS 3b Change the subject of an equation -MS1c Use ratios, fractions and percentages						

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	-Calculate percentage yield	
Opportunities for Challenge	Explain the effect of a limiting quantity of a reactant on the amount of products it is possible to obtain in terms of amounts in moles or masses in grams	
Assessment	End of Topic Test and Termly Assessment	

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Justice Term

W/C	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	HALF TERM
Area of Study	C5 – Energy Changes				C6 – The Rate and Extent of Chemical Change		
Core Learning	<ul style="list-style-type: none"> -Explain how the interaction of particles often involves transfers of energy. -Describe the differences between exothermic and endothermic reactions -RP Investigate the variables that affect temperature changes -Draw and analyse simple reaction profiles -Calculate the energy transferred in chemical reactions -Describe the effects of changing conditions on a system at equilibrium can be predicted using Le Chatelier's Principle 				<ul style="list-style-type: none"> Understand energy changes that accompany chemical reactions. -MS 1a Recognise and use expressions in decimal form. -MS4a Translate information between graphical and numerical form -Calculate mean rate of reaction. 		
Opportunities for Challenge	Interpret appropriate given data to predict the effect of a change in temperature on given reactions at equilibrium						
Assessment	End of Topic Test						

W/C	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	EASTER
Area of Study	C6 – The Rate and Extent of Chemical Change			C7- Organic Chemistry			
Core Learning	<ul style="list-style-type: none"> Understand energy changes that accompany chemical reactions. -Describe and explain factors which effect the rate of reaction, including concentration and surface area. -RP5 Investigate how changes in concentration affect the rates of reaction. -Predict and explain changes in rate of reaction by using the collision theory. -Explain the effects of a catalyst -Define endothermic and exothermic reactions and describe the term 'equilibrium' 			<ul style="list-style-type: none"> Explain the importance of carbon compounds as organic compounds, in terms of structure and properties. -Recognise substances as alkanes given their formulae in these forms. -Recognise substances as alkenes given their formulae in these forms -Describe the process of fractional distillation -Describe the properties of hydrocarbons and identify trends -WS 1.2, 4.1 Investigate the properties of different hydrocarbons -Explain the process of cracking and why it is useful 			

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Opportunities for Challenge	Explain why catalysts increase the rate of reaction by providing a different pathway for the reaction that has a lower activation energy.	Determine name and therefore properties from chemical formula.	
Assessment	End of Topic Test	End of Topic Test and Termly Assessment	

Courage Term

W/C	Week 26	Week 27	Week 28	Week 29	Week 30	Week 31	HALF TERM
Area of Study	C7- Organic Chemistry			Revision			
Core Learning	<p>Explain the importance of carbon compounds as organic compounds, in terms of structure and properties.</p> <ul style="list-style-type: none"> -Recognise substances as alkanes given their formulae in these forms. -Recognise substances as alkenes given their formulae in these forms -Describe the process of fractional distillation -Describe the properties of hydrocarbons and identify trends -WS 1.2, 4.1 Investigate the properties of different hydrocarbons -Explain the process of cracking and why it is useful 						
Opportunities for Challenge	Determine name and therefore properties from chemical formula.						
Assessment	End of Topic Test						

W/C	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	SUMMER
Area of Study	Year 10 Mock Exams		C8 – Chemical Analysis				
Core Learning			<p>Explain a variety of instrumental methods can be used to analyse substances</p> <ul style="list-style-type: none"> -Use melting point and boiling point data to distinguish pure from impure substances. -Explain how paper chromatography separates mixtures and calculate retention factor -RP 6 Investigate how paper chromatography can be used to separate and tell the difference between coloured substances -Explain the tests for a variety of gases, including oxygen and chlorine 				
Opportunities for Challenge			Identification of ions by chemical and spectroscopic means				



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Assessment		End of Topic Test	
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