

Chemistry Long Term Programme of Study Year 10 2021-2022

Temperance Term

W/C	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	HALF TERM
Area of Study	C3 – Quantitative Chemistry							
Core Learning	<p>C3 – Use chemical equations as a way to communicate chemical ideas.</p> <ul style="list-style-type: none"> -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 -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							

W/C	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	CHRISTMAS

Chemistry Long Term Programme of Study Year 10 2021-2022

Area of Study	C4 – Chemical Changes	
Core Learning	<p>C4 – Investigate and predict chemical changes in substances</p> <ul style="list-style-type: none"> -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	

Chemistry Long Term Programme of Study Year 10 2021-2022

Justice Term

W/C	Week 14	Week 15	Week 16	Week 17	Week 18	Week 19	HALF TERM
Area of Study	C5 – Energy Changes						
Core Learning	<p>-Explain how the interaction of particles often involves transfers of energy.</p> <ul style="list-style-type: none"> -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 						
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						
Core Learning	<p>Understand energy changes that accompany chemical reactions.</p> <ul style="list-style-type: none"> -MS 1a Recognise and use expressions in decimal form. -MS4a Translate information between graphical and numerical form -Calculate mean rate of reaction. -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' 						

Chemistry Long Term Programme of Study Year 10 2021-2022



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.	
Assessment	End of Topic Test	

Chemistry Long Term Programme of Study Year 10 2021-2022

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	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						
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			Explain a variety of instrumental methods can be used to analyse substances -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				
Assessment			End of Topic Test				