

Science Long Term Programme of Study Year 8

Temperance Term

W/C	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	HALF TERM
Area of Study	B2.1 Health and Lifestyle and C2.1 The Periodic Table							
Core Learning	<p>Explain what is meant by a balanced diet and how nutrients are digested. Explain what makes a food a healthy option and how each nutrient contributes to a healthy, balanced diet. Explain why testing food for starch, lipids, sugar, and protein is important and the meaning of positive or negative results in terms of the food tests. and explain how each part of the digestive system works in sequence, including adaptations of the small intestine for its function.</p> <p>Describe and explain patterns in the periodic table. Predict the properties of an element, given its position on the Periodic Table. Explain how the position of an element can be used to suggest properties of elements. Compare predictions with evidence, and from reactions involving Group 1 elements.</p>							
Opportunities for Challenge	<p>Explain that different people require different amounts of energy, using energy calculations and data to support explanations Determine word equations to represent displacement reactions.</p>							
Assessment	End of Topic Tests							

W/C	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	CHRISTMAS
Area of Study	P2.1 Electricity and Magnetism and B2.2 Ecosystem Processes						
Core Learning	<p>Explain what electricity is and the difference between current and potential difference. Explain, in terms of electrons, why something becomes charged. Compare a gravitational field and an electric field. Explain the difference between potential difference and current. Explain why potential difference is measured in parallel. Explain why current and potential difference vary in series and parallel circuits. Explain how magnets can be used.</p> <p>Describe the processes of respiration and photosynthesis. State the word equations for photosynthesis and respiration.</p>						



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	Describe the structure and function of the main components of a leaf. Describe the process of chemosynthesis.	
Opportunities for Challenge	Explain what factors affect the resistance of a resistor. State and balance the symbol equations for photosynthesis and respiration.	
Assessment	End of Topic Tests and Temperance Term 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	C2.2 Separation Techniques and P2.2 Energy						
Core Learning	<p>Use a range of separating techniques and identify solutes, solvents and solutions. Explain the process of evaporation and distillation Describe how chromatography separates mixtures</p> <p>Describe how energy is transferred. Calculate energy requirements for various situations, considering diet and exercise. Compare energy transfers to energy conservation. Explain, in terms of particles, how energy is transferred. Compare the advantages and disadvantages of using renewable and non-renewable energy resources. Explain how a range of resources generate electricity, drawing on scientific concepts.</p>						
Opportunities for Challenge	<p>Compare cooling curves for different substances.</p> <p>Calculate and compare energy costs in different scenarios; explain how conservation of energy applies.</p>						
Assessment	End of Topic Tests						

W/C	Week 20	Week 21	Week 22	Week 23	Week 24	Week 25	EASTER
Area of Study	B2.3 Adaptation and Inheritance and C2.3 Metals and Acids						
Core Learning	<p>Explain how competition or long-term environmental change can lead to evolutionary adaptation or extinction. Explain how variation gives rise to different species and explain how competition or long-term environmental change can lead to evolutionary adaptation or extinction. Explain that some variation is affected by both environmental and inherited factors and the causes of continuous and discontinuous variation, represent variation within a species using the appropriate type of graph.</p> <p>Experiment and discover how metals react with different substances. Use formula equations to show what happens when metals react in different acids. Explain the reactivity of metals according to how they react with oxygen.</p>						
Opportunities for Challenge	<p>Explain how characteristics are inherited through and coded for by genes and how natural selection leads to evolution and explain some factors that may have led to extinction. Calculate molecular formulas from given information</p>						
Assessment	End of Topic Tests and Justice Term Assessment						

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Courage Term

W/C	Week 26	Week 27	Week 28	Week 29	Week 30	Week 31	HALF TERM
Area of Study	P2.3 Motion and Pressure and Revision					EOY Assessments	
Core Learning	<p>Use the speed equation to explain unfamiliar situations. Draw and analysed distance–time graphs for a range of journey. Explain gas pressure in different situations and compare some effects of atmospheric pressure. Explain why an object will float or sink in terms of force or density. Apply the concept of moments to everyday situations. Use calculations to explain situations involving moments.</p>						
Opportunities for Challenge	Calculate pressure in multistep problems, compare pressure in different situations						
Assessment	End of Topic Tests and End of Year Assessment						

W/C	Week 32	Week 33	Week 34	Week 35	Week 36	Week 37	SUMMER
Area of Study	EOY Assessments	P2.3 Motion and Pressure C2.4 The Earth					
Core Learning		<p>Use the speed equation to explain unfamiliar situations. Draw and analysed distance–time graphs for a range of journey. Explain gas pressure in different situations and compare some effects of atmospheric pressure. Explain why an object will float or sink in terms of force or density. Apply the concept of moments to everyday situations. Use calculations to explain situations involving moments.</p> <p>Describe the carbon and rock cycles. Describe the composition of the atmosphere in terms of abundance of components. Give a detailed explanation of the sedimentary rock cycle. Link properties of igneous and metamorphic rocks to their methods of formation. Explain changes in the levels of carbon dioxide using stages of the carbon cycle.</p>					



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		Discuss in detail the impacts of global warming, identifying primary and secondary problems.	
Opportunities for Challenge		Calculate pressure in multistep problems, compare pressure in different situations Use data to discuss the relative benefits and drawbacks of recycling materials.	
Assessment		End of Topic Tests	