

Temperance Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	HALF TERM
Topic	P0 Introduction to GCSE Electricity and Introduction to GCSE B0 Infection and Response								
Challenge Objective and Content (for all learners)	P0 – Pupils should be able to explain the rules of current and potential difference in series and parallel circuits. -Calculate resistance and analyse the effect of increasing the length of wire. -RP – Resistance of a wire. B0 – Explain how diseases caused by pathogens (viruses, bacteria, fungi and protists) are spread. -Describe how are bodies defend us from pathogens. -Describe how vaccinations work.								
Inspire Opportunities	P0 – Explore how resistance changes through different components such as a filament lamp. B0 – Describe why some may choose not to get vaccinated. Explain herd immunity.								
Assessment Opportunities	End of Topic Tests								

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	CHRISTMAS
Topic	C0 Introduction to GCSE Electrolysis and B1 Cell Biology						
Challenge Objective and Content (for all learners)	C0 – Describe the structure of atoms. -Describe the process of electrolysis, stating what is formed at the anode and cathode. -Write half equations (HT) B1 -Students should be able to, explain how the structure of different types of cell relate to their function in a tissue, an organ or organ system, or the whole organism. -Describe the structure of eukaryotic and prokaryotic cells, including the structure and function of specialised cells. -WS 4.4 Use prefixes centi, milli, micro ad nano. -WS 1.2 Recognise, draw and interpret images of cells. -RP 1 – Use microscopes to observe and draw animal and plant cells. -Explain the process of cell division and the cell cycle. -WS 1.2 Use models and analogies to develop explanations of how cells divide. -WS 1.3 Evaluate the practical risks and benefits of the use of stem cells. -WS 1.2 Draw and interpret diagrams that model diffusion and osmosis -RP3 Investigate the effect of concentration on the mass of plant tissue. -MS Confidently plot, draw and interpret graphs						

Inspire Opportunities	C0 – Consider the practical uses of electrolysis, such as electroplating. B1 - Use estimations and explain when they should be used to judge the relative size or area of sub-cellular structures.
Assessment Opportunities	End of Topic Tests

Justice Term

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	B1 Cell Biology and C1 Atomic Structure and the Periodic Table				C1 Atomic Structure and the Periodic Table and P1 Energy		HALF TERM
Challenge Objective and Content (for all learners)	<p>B1 -Students should be able to, explain how the structure of different types of cell relate to their function in a tissue, an organ or organ system, or the whole organism.</p> <p>-Describe the structure of eukaryotic and prokaryotic cells, including the structure and function of specialised cells.</p> <p>-WS 4.4 Use prefixes centi, milli, micro ad nano.</p> <p>-WS 1.2 Recognise, draw and interpret images of cells.</p> <p>-RP 1 – Use microscopes to observe and draw animal and plant cells.</p> <p>-Explain the process of cell division and the cell cycle.</p> <p>-WS 1.2 Use models and analogies to develop explanations of how cells divide.</p> <p>-WS 1.3 Evaluate the practical risks and benefits of the use of stem cells.</p> <p>-WS 1.2 Draw and interpret diagrams that model diffusion and osmosis</p> <p>-RP3 Investigate the effect of concentration on the mass of plant tissue.</p> <p>-MS Confidently plot, draw and interpret graphs</p> <p>C1 – Describe the development and structure of the atom and periodic table.</p> <p>-Represent chemical reactions as word and symbol equations.</p> <p>-AT4 Safe use of a range of equipment to separate chemical mixtures</p> <p>-WS 1.1,1.6 Describe how scientific methods and theories develop over time</p>				<p>C1 – Describe the development and structure of the atom and periodic table.</p> <p>-Represent chemical reactions as word and symbol equations.</p> <p>-AT4 Safe use of a range of equipment to separate chemical mixtures</p> <p>-WS 1.1,1.6 Describe how scientific methods and theories develop over time</p> <p>P1 - There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example:</p> <ul style="list-style-type: none"> • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. <p>-WS1.2, 4.3 Calculate the amount of energy associated with a moving object or a stretched spring</p>		

		<p>-MS 3b,c Calculate kinetic energy, elastic potential energy and gravitational potential energy</p> <p>-RP1 Investigate the specific heat capacity of one or more materials</p> <p>-MS 3b, c Calculate power</p> <p>-Investigate thermal conductivity using rods of different materials</p> <p>-MS 1a,c, 3b,c Calculate and use efficiency values as a decimal or as a percentage</p>	
Inspire Opportunities	<p>B1 - Use estimations and explain when they should be used to judge the relative size or area of sub-cellular structures.</p> <p>C1 - Experimentally determine the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure</p>	<p>P1 - Experimentally compare and contrast two electric motors that both lift the same weight through the same height but one does it faster than the other</p> <p>C1 - Experimentally determine the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure</p>	
Assessment Opportunities	End of Topic Tests	End of Topic Tests	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	C1 Atomic Structure and the Periodic Table and P1 Energy				P1 Energy and Revision		EASTER
Challenge Objective and Content (for all learners)	<p>C1 – Describe the development and structure of the atom and periodic table.</p> <p>-Represent chemical reactions as word and symbol equations.</p> <p>-AT4 Safe use of a range of equipment to separate chemical mixtures</p> <p>-WS 1.1,1.6 Describe how scientific methods and theories develop over time</p> <p>P1 - There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example:</p> <ul style="list-style-type: none"> • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. <p>-WS1.2, 4.3 Calculate the amount of energy associated with a moving object or a stretched spring</p> <p>-MS 3b,c Calculate kinetic energy, elastic potential energy and gravitational potential energy</p> <p>-RP1 Investigate the specific heat capacity of one or more materials</p> <p>-MS 3b, c Calculate power</p>				<p>P1 - There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example:</p> <ul style="list-style-type: none"> • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. <p>-WS1.2, 4.3 Calculate the amount of energy associated with a moving object or a stretched spring</p> <p>-MS 3b,c Calculate kinetic energy, elastic potential energy and gravitational potential energy</p>		

Science Learning Journey Year 9

	<ul style="list-style-type: none"> -Investigate thermal conductivity using rods of different materials -MS 1a,c, 3b,c Calculate and use efficiency values as a decimal or as a percentage 	<ul style="list-style-type: none"> -RP1 Investigate the specific heat capacity of one or more materials -MS 3b, c Calculate power -Investigate thermal conductivity using rods of different materials -MS 1a,c, 3b,c Calculate and use efficiency values as a decimal or as a percentage 	
Inspire Opportunities	<p>P1 - Experimentally compare and contrast two electric motors that both lift the same weight through the same height but one does it faster than the other</p> <p>C1 - Experimentally determine the empirical formula of an ionic compound from a given model or diagram that shows the ions in the structure</p>	<p>P1 - Experimentally compare and contrast two electric motors that both lift the same weight through the same height but one does it faster than the other</p>	
Assessment Opportunities	End of Topic Tests		

Courage Term

	Week 1	Week 2	Week 3	Week 4	Week 5		
Topic	P1 Energy and Revision					End of Year Assessments	HALF TERM
Challenge Objective and Content (for all learners)	<p>P1 - There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example:</p> <ul style="list-style-type: none"> • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. <p>-WS1.2, 4.3 Calculate the amount of energy associated with a moving object or a stretched spring -MS 3b,c Calculate kinetic energy, elastic potential energy and gravitational potential energy -RP1 Investigate the specific heat capacity of one or more materials -MS 3b, c Calculate power -Investigate thermal conductivity using rods of different materials -MS 1a,c, 3b,c Calculate and use efficiency values as a decimal or as a percentage</p>						
Inspire Opportunities	P1 - Experimentally compare and contrast two electric motors that both lift the same weight through the same height but one does it faster than the other						
Assessment Opportunities	End of Topic Tests						

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	
Topic	P1 Energy C2 Bonding, Structure, and the Properties of Matter						SUMMER
Challenge Objective and Content (for all learners)	<p>P1 - There are changes in the way energy is stored when a system changes. Students should be able to describe all the changes involved in the way energy is stored when a system changes, for common situations. For example:</p> <ul style="list-style-type: none"> • an object projected upwards • a moving object hitting an obstacle • an object accelerated by a constant force • a vehicle slowing down • bringing water to a boil in an electric kettle. <p>-WS1.2, 4.3 Calculate the amount of energy associated with a moving object or a stretched spring -MS 3b,c Calculate kinetic energy, elastic potential energy and gravitational potential energy -RP1 Investigate the specific heat capacity of one or more materials -MS 3b, c Calculate power</p>						

	<p>-Investigate thermal conductivity using rods of different materials -MS 1a,c, 3b,c Calculate and use efficiency values as a decimal or as a percentage</p> <p>C2 – Explain how atoms are held together in structures and describe their properties.</p> <ul style="list-style-type: none"> - Describe and draw ionic, covalent and metallic bonding. - MS 5b Represent 2D and 3D forms of bonding - Draw dot and cross diagrams for ionic and covalent bonds. - Describe the structures of covalent and ionic bonds, including giant structures. 	
<p>Inspire Opportunities</p>	<p>P1 - Experimentally compare and contrast two electric motors that both lift the same weight through the same height but one does it faster than the other</p> <p>C2 - Students should consider advantages and disadvantages of the applications of these nanoparticulate materials, but do not need to know specific examples or properties other than those specified.</p>	
<p>Assessment Opportunities</p>	<p>End of Topic Tests</p>	