


Learning Plan 3		Subject/Pwnc: Science		Year/Blwyddyn: 8	
<p><u>The Four Purposes in Science and Technology:</u></p> <p>Ambitious, capable learners, who: set themselves high standards; seek and enjoy challenge; are increasingly knowledgeable and skilful; ask questions; enjoy solving problems; can explain ideas and concepts; can use number effectively in different contexts; interpret data and apply mathematical concepts; use digital technologies creatively to communicate, find and analyse information; research and evaluate critically what they find.</p> <p>Enterprising, creative contributors, who: take measured risks.</p> <p>Ethical, informed citizens, who: find, evaluate and use evidence in forming views; consider the impact of their actions when making choices and acting; are committed to sustainability.</p> <p>Healthy, confident individuals, who: are establishing their ethical beliefs; face and overcome challenge.</p>					
<p>Knowledge focus/what matters: Being curious and searching for answers is essential to understanding and predicting phenomena. The world around us is full of living things which depend on each other for survival. Forces and energy provide a foundation for understanding our universe.</p>					
Learning objective/key question	What will I know and be able to do? I can...	How will I develop my skills? (Success Criteria)		Homework/Gwaith cartref to support progress	
Week 1 Explorers	<ul style="list-style-type: none">Be able to identify Antarctica on a mapDescribe and explain the climate thereDescribe and explain the different landscapes in antarctica.	<p>I can use previous knowledge to from ideas about new science concepts.</p> <p>I can use scientific research to consolidate my knowledge and justify my answers.</p> <p>I can identify countries on a map.</p> <p>I can explain scientific reasoning behind climates.</p>		Wk 1	Homework: Set: Due:
Week 2 Explorers	<ul style="list-style-type: none">Describe and explain the type of equipment you would take on an expedition to antarcticaCreate a kit list justifying the usefulness for each item in Antarctica's climateBudget the equipment costs for the trip	<p>I can review my opinions based on scientific research.</p> <p>I can make links between wider subjects.</p> <p>I can justify my reasoning.</p> <p>I can stick to a budget and prioritise essential equipment.</p>		Wk 2	Homework: Set: Due:



	<ul style="list-style-type: none"> Describe why we need calories and the conditions where we may need more/less 			
Week 3 Explorers	<ul style="list-style-type: none"> Design and plan appropriate food for the expedition while sticking to a budget. Describe adaptations that allow organisms (e.g., penguins, krill) to survive in extreme cold. Understand Antarctic food chains and the role of keystone species like krill. Evaluate the impact of climate change on Antarctic ecosystems. 	<p>I can use previous knowledge to form ideas about new science concepts.</p> <p>I can use scientific research to consolidate my knowledge and justify my answers.</p> <p>I can stick to a budget and justify my choices.</p> <p>I can select appropriate food for my individual needs in varying conditions.</p> <p>I can describe what an adaptation is and provide examples.</p>	Wk 3	<p>Homework:</p> <p>Set:</p> <p>Due:</p>
Week 4 Explorers	<ul style="list-style-type: none"> Interpret real data (e.g., satellite images, graphs of sea ice extent). Communicate scientific findings using appropriate terminology, graphs, and reports. Present data appropriately in graphs. 	<p>I can use scientific research to consolidate my knowledge and justify my answers.</p> <p>I can select appropriate ways to display data.</p> <p>I can use scientific data to form opinions.</p> <p>I can use data to justify my point of view.</p>	Wk 4	<p>Homework:</p> <p>Set:</p> <p>Due:</p>
Week 5 Materials Using chemical properties to classify	<ul style="list-style-type: none"> Use my existing knowledge to describe some of the properties of metals and non-metals. I can use practical methods to identify if a substance is a metal or non-metal. 	<p>I can use previous knowledge to form ideas about new science concepts.</p> <p>I can use scientific research to consolidate my knowledge and justify my answers.</p> <p>I can formulate equations based on reactants and products.</p> <p>I can explain the results of chemical reactions, based on the reactants used.</p>	Wk 5	<p>Homework:</p> <p>Set:</p> <p>Due:</p>

different materials.	<ul style="list-style-type: none"> • I can describe the reactions of different mental compounds with acid. • Describe the differences between natural and man-made substances. • Identify different properties of natural and man-made substances. • Explain why the properties of different materials make them good for their uses. 	<p>I can review my opinions based on scientific research.</p> <p>I can identify and classify objects based on the criteria provided.</p>		
Week 6 Materials Identifying pure and impure substances. Methods of separating mixtures.	<ul style="list-style-type: none"> • Explain the differences between pure and impure substances. • Describe how to test for pure and impure substances in science i.e pure and impure water testing. • Describe and explain the differences between mixtures and compounds. • Identify different ways to separate mixtures based on the substances present. • Use these methods to separate various mixtures. 	<p>I can explain science concepts using key terms.</p> <p>I can from my own strategies and use them to find solutions to problems I have identified.</p> <p>I can evaluate, process and amend my approach based on what works.</p> <p>I can apply my theory to practical situations within science.</p>	Wk 6	<p>Homework:</p> <p>Set:</p> <p>Due:</p>
Week 7 Materials Properties and uses of ceramics and composites	<ul style="list-style-type: none"> • Identify different uses of ceramics and link these to their individual properties. • Estimate the properties of a composite material based on the mixture of materials it contains. • Evaluate the environmental, social and economic impacts of using specific composites. 	<p>I can evaluate the uses of different materials based on their chemical and physical properties.</p> <p>Make inferences of a material based on its components.</p> <p>Evaluate the impacts of different materials.</p>	Wk 7	<p>Homework:</p> <p>Set:</p> <p>Due:</p>

<p>Week 8 Materials Polymers</p>	<ul style="list-style-type: none"> • Describe how polymers are made from specific monomers in a polymerisation reaction. • Identify uses of different polymers in relation to their properties. • Discuss the environmental issues associated with the use of polymers. 	<p>I can identify products of reactions.</p> <p>I can identify and develop arguments between topics.</p> <p>I can identify and develop arguments for and against topics.</p>		<p>Homework:</p> <p>Set:</p> <p>Due:</p>
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