

TBS Curriculum Map

Year: 8

Subject: Science

	Autumn 1	Autumn 1	Autumn 1	Autumn 2	Autumn 2	Spring 1	Spring 2	Spring 2	Summer 1	Summer 2
Theme/Topic	P2.1 Electricity and magnetism	P2.2 Energy	P2.3 Motion and pressure	C2.4 The Earth	B2.1 Healthy lifestyle.	B2.2 Ecosystem processes	B2.3 Adaptation and inheritance	C2.1 the Periodic Table	C2.2 Separation techniques	C2.3 Metals and acids
Skills	Suggest ways to reduce the risk of getting electrostatic shocks. Describe how to measure potential difference. - Describe what is meant by the rating of a battery or bulb. Calculate resistance using the	Explain why the evidence supports your idea. Evaluate the social, economic and environmental consequences of using a resource to generate electricity, from data. Compare the energy usage and cost of running different	TBAT calculate speed. TBAT interpret distance/time graphs. To calculate speed using distance/time graphs. Carry out calculations involving pressure, force, and area in hydraulics, in which the effects of applied forces are	Identify circumstances that indicate fast processes of change on Earth and those that indicate slower processes. Describe similarities and differences between the rock cycle and everyday physical and chemical processes. Evaluate the implications of a	Interpret nutritional information on food packaging to identify a healthy food. Critique claims for a food product or diet by analysing nutritional information. Record the observation you want to explain. Calculate food requirements for a healthy	Carry out an experiment to prove that oxygen is produced during photosynthesis. Suggest reasons for particular adaptations of leaves, roots, and stems. Sketch a line graph to show how the rate of photosynthesis is affected by changing conditions. Plan an investigation to explain the effect of	Predict implications of a change in the environment on a population. Explain the choice of type of graph. Use a diagram to show the relationship between DNA, chromosomes, and genes. Explain what is meant by a theory. Evaluate whether evidence for	Use data about the properties of elements to identify similarities, patterns, and anomalies. Use observations of a pattern in chemical reactions to predict the behaviour of an element in Group 1, Group	Devise ways to separate mixtures, based on their properties. Use the solubility curve of a solute to explain observations about solutions. Choose the most suitable technique to separate out a mixture of substances. Use evidence from chromatography to identify unknown substances in mixtures.	Justify the use of specific metals and non-metals for different applications, using data provided. Deduce the physical or chemical changes a metal has undergone from its appearance. Describe an oxidation, displacem

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	<p>formula: resistance (Ω) = potential difference (V) \div current (A). Compare the advantages of series and parallel circuits for particular uses. Turn circuit diagrams into real series and parallel circuits, and vice versa. Evaluate a model of current as electrons moving from the negative to the</p>	<p>home devices. Show how energy is transferred between energy stores in a range of real-life examples. Calculate a useful energy and wasted energy, and efficiency.</p>	<p>increased . Investigate how pressure from your foot onto the ground varies with different footwear. Use calculations to explain situations involving moments .</p>	<p>proposal to reduce carbon emissions. Evaluate claims that human activity is causing global warming or climate change. Identify a pattern in data from a results table or bar chart.</p>	<p>diet using information provided. Evaluate how well a model represents key features of the digestive system. Prepare a table with space to record all measurements. Identify features of an investigation which are hazardous. Draw line graphs to display relationships. Present secondary data using an appropriate method, interpreting this data to</p>	<p>exercise on respiration rates. Analyse strengths and weaknesses in your enquiry.</p>	<p>a species changing over time supports natural selection. Explain some factors that may have led to extinction.</p>	<p>7 and Group 0.</p>	<p>ent, or metal-acid reaction with a word equation. Deduce the physical or chemical changes a metal has undergone from its appearance. Place an unfamiliar metal into the reactivity series based on information about its reactions. Use particle diagrams to represent</p>
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	positive terminal of a battery, through the circuit.				draw conclusions.					oxidation, displacement and metal-acid reactions.
Knowledge	<p>Explain, in terms of electrons, why something becomes charged. Describe how to measure potential difference.</p> <p>- Describe what is meant by the rating of a</p>	<p>Compare the energy in food and fuels with the energy needed for different activities.</p> <p>Describe how electricity is generated using a fossil fuel or a renewable</p>	<p>TBAT describe relative motion. Describe how atmospheric pressure changes with height. Describe how atmospheric pressure changes with height. Explain why liquid pressure</p>	<p>Describe and compare the properties of the different layers of the Earth's structure.</p> <p>Explain why models are good or poor representations of the Earth's structure in terms of materials used. Explain why a</p>	<p>Explain what makes a food a healthy option.</p> <p>- Explain how each nutrient contributes to a healthy, balanced diet.</p> <p>Describe how to test foods for starch, lipids, sugar, and protein. Explain the meaning</p>	<p>Describe the process of photosynthesis.</p> <p>- Explain how the structures of the leaf make it well adapted for photosynthesis.</p> <p>- Carry out and record observations for an experiment to test for the presence of starch in a leaf.</p>	<p>Explain how organisms are adapted to seasonal changes.</p> <p>- Explain how competition or long-term environmental change can lead to evolutionary adaptation or extinction and the role variation plays in a species success. Explain how variation gives rise to</p>	<p>State that the horizontal rows of the Periodic Table are called periods, and the vertical columns are called groups. State that as you go down a group and across a period the elements</p>	<p>Explain the relationship between solutes, solvents, and solutions. State that mixtures may be separated/filtered due to differences in their physical properties. Identify the physical property that must be different in order to</p>	<p>- Identify an unknown element from its physical and chemical properties. Compare the properties of typical metals and non-metals. Describe a difference in physical properties between typical</p>

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	<p>battery or bulb. Describe the difference between conductors and insulators in terms of resistance.</p> <p>- Compare simply the resistance of conductors and insulators.</p> <p>Describe how and explain why p.d. varies in series and parallel circuits.</p>	<p>resource .</p> <p>Describe and explain the link between power, energy transfer, fuel use, and cost of using domestic appliances.</p> <p>Explain what brings about transfers in energy between stores.</p> <p>Explain how energy is dissipated in a range of situations.</p>	<p>changes with depth. Compare stress in different situations, explaining the differences in pressure using scientific knowledge.</p> <p>Calculate the moment of a force.</p> <p>Explain how turning forces are used in levers.</p>	<p>sedimentary rock has a particular property based on how it was formed.</p> <p>Identify the causes of weathering and erosion and describe how they occur.</p> <p>Explain why igneous and metamorphic rocks have particular properties based on how they were formed.</p> <p>- Use the rock cycle</p>	<p>of positive or negative results in terms of the food tests.</p> <p>Explain that different people require different amounts of energy, using energy calculations and data to support explanations.</p> <p>Describe the structure and function of the main parts of the digestive system.</p> <p>- Describe the process</p>	<p>Describe how a plant uses minerals for healthy growth and explain deficiency symptoms in plants.</p> <p>Explain the process of aerobic respiration.</p> <p>Explain the uses of the products from anaerobic respiration.</p> <p>- Explain the differences between the two types of respiration.</p>	<p>different species. Use knowledge of continuous and discontinuous variation to explain whether characteristics are inherited, environmental, or both.</p> <p>Describe how chromosomes from both parents combine to form offspring.</p> <p>Explain how natural selection leads to evolution.</p> <p>- Explain how</p>	<p>show patterns in physical properties.</p> <p>Use data to describe a trend in physical properties of Group 1</p> <p>Use data to describe a trend in physical properties of Group 7 elements .</p> <p>Use data showing a pattern in physical properties to predict the missing value for an element</p>	<p>separate a mixture by evaporation or distillation. Describe and explain what happens to a mixture when it undergoes chromatography.</p>	<p>metal and non-metal oxides. Describe an oxidation reaction with a word equation. Compare the reactions of different metals with dilute acids. Compare the reactions of different metals with oxygen. Compare the reactions of different metals with water. Use the reactivity series to explain</p>
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	<p>Describe how current changes in series and parallel circuits when components are changed .</p> <p>Use a model to explain how current flows in a circuit.</p>			<p>to explain how the material in rocks is recycled.</p> <p>Describe how human activities affect the carbon cycle.</p> <p>Explain changes in the levels of carbon dioxide using stages of the carbon cycle.</p> <p>Explain why recycling of some materials is particularly important .</p>	<p>of digestion.</p> <p>Explain how and why food needs to be digested.</p> <p>Explain how enzymes affect the rate of digestion.</p> <p>Describe the difference between recreational and medicinal drugs.</p> <p>- Describe the effects of drugs on health and behaviour .</p> <p>Describe the effect of alcohol on health and behaviour .</p> <p>- Describe the effect</p>		<p>Darwin used the evidence from finches to develop his theory of natural selection and evolution.</p> <p>Explain how a lack of biodiversity can affect an ecosystem.</p>	<p>in Group 0.</p>		<p>displacement reactions.</p>
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Cultural Capital										
Curriculum overlap									C1.2 Atoms, elements and compounds	