

TBS Curriculum Map

Year: 7

Subject: Science

	Autumn 1	Autumn 1	Autumn 1	Autumn 2	Autumn 2	Autumn 2	Spring 1	Spring 1	Spring 2	Spring 2	Summer 1	Summer 2
Theme/ Topic	Introduction to Science.	C1.1 Particles	C1.2 Elements, atoms and compounds	P1.1 Forces	C1.3 Reactions	C1.4 Acids and alkalis	P1.2 Sound	P1.3 Light	P1.4 Space	B1.1 Cells	B1.2 Body systems	B1.3 Reproduction
Skills	How to ask scientific questions How to be safe in a science lab Collecting, recording and presenting data Analysing patterns in data Evaluating data and patterns.	Relate the features of the particle model to the properties of materials in different states. Devise ways to separate mixtures, based on their properties.	Represent atoms, molecules and elements using models. - Devise suitable techniques to separate mixtures, based on their	Plan method and identify how to control variables. Using force and extension data, compare the behaviour of different materials in deformation using the idea of proportionality. 4 Draw a straight	Suggest a scientific idea that might explain the observation. Describe the evidence for your idea. Explain why the evidence supports your idea.	Identify risks and hazards. Identify the best indicator to distinguish between solutions of different pH, using data provided. Deduce the hazards of different	Explain observations where sound is reflected, transmitted or absorbed by different media. Use drawings of waves to describe how sound waves change	Construct ray diagrams to show how light reflects off mirrors, forms images and refracts. Use ray diagrams to describe how light passes through lenses and transpa	Explain the choice of particular units for measuring distance. Assess the strength of evidence, deciding whether it is sufficient	Use a microscope to observe a prepared slide and state the magnification. Deduce general patterns about how the structure of different cells is related to their function Choose a suitable range for the	Explain why multi-cellular organisms need organ systems to keep their cells alive. Carry out an experiment to record measurements of forces in newtons, evaluating the accuracy and precision of the method chosen. Interpret observations carried out during a dissection.	Interpret observations given, to categorise and explain physical and emotional changes during adolescence.

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		<p>Explain how substances dissolve using the particle model. Analyse and interpret solubility curves. Describe how controlling variables is important in providing evidence for a conclusion.</p>	<p>properties. TBAT determine how many atoms of each element there is in a compound.</p>	<p>line or a curve of best fit through the points.</p>		<p>alkalis and acids using data about their concentration and pH.</p>	<p>with volume or pitch. Describe the link between frequency and pitch. Describe the amplitude and frequency of a wave from a diagram or oscilloscope picture. Identify ways of reducing the risk.</p>	<p>rent materials. Explain observations where coloured lights are mixed or objects are viewed in different lights. Decide whether the conclusion of the experiment agrees with your prediction.</p>	<p>nt to support a conclusion. Make deductions from observation data of planets, stars and galaxies. Relate observations of changing day length to an appropriate model of the solar system. Use data to show the effect</p>	<p>independent and dependent variable. Select the appropriate magnification to observe an amoeba and a euglena cell through a microscope.</p>	<p>TBAT use a model to explain inhalation/exhalation. Make a conclusion and explain it.</p>	
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										of the Earth's tilt on temperature and day-length.		
Knowledge	<p>To- know what should be included in the plan for an investigation.</p> <ul style="list-style-type: none"> - Identify different types of variable and experimental errors. - State what is meant by a risk 	<p>Explain the properties of solids, liquids and gases based on the arrangement and movement of their particles.</p> <p>Explain changes in states in terms of changes</p>	<ul style="list-style-type: none"> - State definitions of atoms, elements, molecules and compounds. - Know the difference between a mixture and a pure substance. <p>To know that compo</p>	<p>Explain how forces deform objects in a range of situations.</p> <p>Explain the effect of drag forces and friction in terms of forces.</p> <ul style="list-style-type: none"> - Describe what happens to a moving 	<p>Describe some features of chemical reactions.</p> <ul style="list-style-type: none"> - Give examples of chemical reactions and physical changes. - Record simple observations from 	<p>Compare the properties of acids and alkalis.</p> <ul style="list-style-type: none"> - Describe differences between concentrated and dilute solutions of an acid. - Identify and describ 	<p>Describe and explain how sound is produced and travels in different media.</p> <p>Contrast the speed of sound and the speed of light.</p> <p>Explain observations of how sound travels using the idea of a</p>	<p>Explain how ray diagrams can explain the formation of shadows and eclipses.</p> <p>Explain how images are formed in a plane mirror using a ray diagram.</p> <p>Use a ray diagra</p>	<p>Describe how space observation of stars is affected by the scale of the Universe.</p> <p>Explain why we see objects in the Solar System, and describe how</p>	<ul style="list-style-type: none"> - Explain what each part of the microscope does and how it is used. <p>Identify and compare the similarities and differences between plant and animal cells.</p>	<p>Define and state examples of tissues, organs, and organ systems.</p> <ul style="list-style-type: none"> - Explain the hierarchy of organisation in a multi-cellular organism. <p>Explain which substances move into and out of cells.</p> <p>Explain how the adaptations of the parts of the gas</p>	<p>Describe the main changes that take place during puberty.</p> <p>Explain the difference between adolescence and puberty.</p> <p>Explain how different parts of the male and female reproductive systems</p>

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	<p>assessment.</p>	<p>to the energy of particles. A substance is a solid below its melting point, a liquid between its melting and boiling points, and a gas above its boiling point Explain unfamiliar observations about gas pressure in terms of</p>	<p>unds can be represented as a chemical formula.</p>	<p>object when the resultant force acting on it is zero. Describe the effects of drag and other forces on falling or accelerating objects as they move. To describe the effect of gravitational forces on Earth in space.</p>	<p>practical work. - Compare chemical reactions to physical changes.</p>	<p>e the meaning of hazard symbols and offer suitable safety precautions. Use the pH scale to measure acidity and alkalinity. - Describe how indicators categorise solutions as acidic, alkaline, or neutral.</p>	<p>longitudinal wave. Compare and contrast waves of different loudness using a diagram. Describe how the ear works and how your hearing can be damaged.</p>	<p>m to describe and explain how light travels through a transparent block and convex and concave lenses. Explain how the eye forms an image and how lenses correct vision. Explain what happens when</p>	<p>they appear to move. Explain the motion of the Sun, stars, and Moon across the sky. Explain why seasonal changes happen. Describe and explain the phases of the Moon from diagrams of the</p>	<p>Describe examples of specialised animal and plant cells. Explain which substances move into and out of cells. Explain what a unicellular organism is and give detailed examples.</p>	<p>exchange system help them perform their function. Explain how the actions of the ribcage and diaphragm lead to inhaling and exhaling. - Explain the relationship between the bones and joints in the skeleton. - Explain the link between structure and functions in the muscular skeletal system. Describe the structure and</p>	<p>work together to achieve certain functions. Describe the processes of fertilisation and where it occurs in the body. Explain the sequence of fertilisation and implantation. - Describe accurately the sequence of events</p>
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		particle s.				<p>Explain how neutralisation reactions are used in a range of situations.</p> <p>Describe the steps in making a salt in a neutralisation reaction.</p>		<p>light passes through a prism.</p> <p>- Describe how primary colours add to make secondary colours.</p> <p>- Explain how filters and coloured materials subtract light.</p>	<p>Earth, Sun and Moon.</p> <p>Compare explanations about the motion and structure of the Universe from different periods in history.</p>		<p>function of joints.</p> <p>Explain how the muscle groups interact with other tissues to cause movement.</p>	<p>during gestation.</p> <p>Predict the effect of cigarettes, alcohol or drugs on the developing fetus.</p> <p>Identify key events on a diagram of the menstrual cycle.</p> <p>Make deductions about how contraception and fertility treatments work.</p>
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Cultural Capital	Measuring and managing risk. Identifying hazards in any situation and follow safety precautions to minimise risk.											
Curriculum overlap	All practical topics					2.3 Metals and acids.						