



Curriculum Map

Subject: Science

Year Group: 8

	Autumn 1/ Autumn 2	Autumn 2	Autumn 2/Spring 1	Spring 2	Summer 1	Summer 2
Content 'Know What'	1 Independent Study Skills and Maths Skills 2 Chemistry: Acids and Alkalis Understand how to identify acids and alkalis and understand their properties, reactions and uses.	1 Biology: Healthy Lifestyle Compare the effects of healthy and unhealthy lifestyle choices on the body Understand the digestive system, the role of the organs involved, and how enzymes help break down food.	1 Biology: Ecosystems Explain how energy is used by producers and consumers and how it supports life at all stages	1 Physics: Electricity & Magnets Investigate simple series and parallel circuits. Learn about the relationship between current, voltage and potential difference. Learn how electromagnets work. 2 Chemistry: Earth and Rocks Learn about the structure of the Earth, including the atmosphere	1 Biology: Adaptations How organisms are adapted to their environment and how characteristics are passed on from parents to offspring 2 Chemistry: Periodic Table Introduction – learn how the periodic table can be used to identify and predict properties of the different elements.	1 Physics: Energy Describe different energy stores and learn about how energy can be transferred from one store to another. Learn about the difference between heat and temperature, and understand how heat can be transferred. 2 Investigative Skills
Skills 'Know How'	Use a selection of indicators, including litmus and universal, to classify various household and lab chemicals as acids and alkalis. Use universal indicator to classify acids and alkalis as strong or weak	Safely plan and carry out food tests and interpret sometimes ambiguous results. Propose ideas for a healthy diet. Interpret a variety of data and graphs in order to explain the effects	Using a microscope to identify stomata in a leaf Proposing hypotheses Analysing plant mineral deficiency problems and proposing solutions	<ul style="list-style-type: none"> • Practical skills • Analysis of experimental outcomes and draw conclusions • Writing balanced equations • Predicting and testing predictions 	Interpretation of patterns <ul style="list-style-type: none"> • Comparing predictions with evidence • Making links between properties of elements • Use and evaluate models to 	Record, present and interpret observations and data, including identifying patterns and using observations, measurement and data to draw conclusions. Use appropriate techniques,

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	<p>and assign a pH number to them. Investigate the effectiveness of different indigestion tablets and make a judgement about which would be the best. Use scientific equipment, including Bunsen burners, to safely plan and carry out chemical reactions and separation techniques to produce salts.</p>	<p>of an unhealthy diet.</p>	<p>Compare aerobic and anaerobic respiration Interpreting food webs and using them to suggest the impact of different types of disruption on a variety of ecosystems</p>	<ul style="list-style-type: none"> • Evaluating materials • Describe the structure of the earth • Observe and make predictions about different types of rock formation • Be able to interpret and explain the rock cycle 	<p>represent particles</p> <ul style="list-style-type: none"> • Practical skills • Analysis of experimental outcomes and draw conclusions • Writing balanced equations • Predicting and testing predictions • Evaluating materials 	<p>apparatus, and materials during laboratory work, paying attention to health and safety.</p> <ul style="list-style-type: none"> • Select, plan, and carry out the most appropriate types of scientific enquiries to test predictions, including identifying independent, dependent, and control variables, where appropriate. • Make predictions using scientific knowledge and understanding. Present reasoned explanations, including explaining data in relation to predictions and hypotheses

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Key questions	<p>What are acids and alkalis? Where are they found? What uses do they have? What can indicators tell us? How does the pH scale work? What are neutralisation reactions? What are salts and how do we make them?</p>	<p>What is a healthy diet? Why do organisms need food to survive? How does our digestive system work? What role do enzymes have in the digestion of food?</p>	<p>What is photosynthesis and why is it so important? How do plants get everything they need for photosynthesis? What other nutrients do plants need and what happens if they don't get them? Why is respiration so important? What is the difference between aerobic and anaerobic respiration? What are ecosystems? How can food webs show us the interdependence of living things?</p>	<p>What is electric charge? How do circuits work? What is the relationship between current, voltage and resistance? What is the rock cycle? What different types of rocks are there and how are they formed?</p>	<p>What do animals compete for? What do plants compete for? How are different animals and plants adapted to survive in different conditions? Why and how do organisms vary? How do we inherit certain characteristics? What is natural selection? How do species become extinct?</p> <p>What is an element? What is the Periodic Table and why is it important? How can we use the Periodic Table to predict the properties of elements and their compounds?</p>	<p>Which foods have more energy than others? What is the law of conservation of energy? What are the different energy stores and how is energy transferred from one store to another? What is temperature and what is heat? What happens when you heat things up?</p>

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Assessment	Low Stakes Knowledge test at end of topic to build a secure knowledge base. Literacy and numeracy tasks within each topic. Summative end of Term Exam to assess knowledge, understanding and application.	Low Stakes Knowledge test at end of topic to build a secure knowledge base. Literacy and numeracy tasks within each topic. Summative end of Term Exam to assess knowledge, understanding and application.	Low Stakes Knowledge test at end of topic to build a secure knowledge base. Literacy and numeracy tasks within each topic. Summative end of Term Exam to assess knowledge, understanding and application.	Low Stakes Knowledge test at end of topic to build a secure knowledge base. Literacy and numeracy tasks within each topic. Summative end of Term Exam to assess knowledge, understanding and application.	Low Stakes Knowledge test at end of topic to build a secure knowledge base. Literacy and numeracy tasks within each topic. Summative end of Term Exam to assess knowledge, understanding and application.	Low Stakes Knowledge test at end of topic to build a secure knowledge base. Literacy and numeracy tasks within each topic. Summative End Of YEar Exam to assess knowledge, understanding and application. Investigative Skills
Literacy/ Numeracy/ SMSC/ Character	Literacy Extended writing tasks Drawing conclusions from data identifying causal links Extracting information Numeracy Presenting data in tables and graphs Simple data analysis Identifying patterns Balancing equations SMSC Human impact on the earth Character Integrity: during practical work Resilience: using equations and data handling Confidence: participation in classroom discussions					