

Curriculum Map

Science



Curriculum map: Science

Autumn	Half term 1 Sept – October	Half term 2 November - December
Weeks	7 weeks	7 weeks
Module	Energy and Forces	Acids and Alkalis
Key learning questions and concepts	<p>Know sources of energy and importance of sun.</p> <p>Know difference between renewable non-renewable energy.</p> <p>Understand related issues to using and manufacturing different sources of energy.</p> <p>Explore and understand how different forces act</p>	<p>Name and describe properties of common acids and alkalis.</p> <p>Explain oxidation reaction.</p> <p>Identify hazard signs.</p> <p>Understand and use the Ph scale.</p> <p>Understand everyday use of acids and alkalis and the use of neutralisation in daily life.</p> <p>Use related equations and chemical formula</p>
Skills and abilities	<p>Be able to discuss and explain issues surrounding renewable and non-renewable energies</p> <p>Be able to name and explain forces and how they act.</p>	<p>Carry out practicals</p> <p>Design fair test</p> <p>Use apparatus effectively</p>
Extension and independence	Develop own bike powered inventions	Explore own indicators, use own suggestions to experiment
Feedback and assessment	<p>End of module self and teacher assessment.</p> <p>End of module open book progress checker.</p> <p>Ongoing written and verbal feedback</p>	<p>End of module self and teacher assessment.</p> <p>End of module open book progress checker.</p> <p>Ongoing written and verbal feedback</p>
Links to broader curriculum content	<p>Maths – costing of renewable / non renewable</p> <p>PSHE renewable non-renewable discussion – electric cars</p>	Geography – farming neutralising soil
Personal development and enrichment	<p>Rampion wind farm</p> <p>Solar panels around Brighton</p> <p>Bike it Ben bike smoothie maker</p> <p>Jack and Jill Windmills</p>	Make bath bombs possible visits to LUSH, Body Shop
Celebration of achievement:	Work on display, special mention in assembly, message home, bonus points	Work on display, special mention in assembly, message home, bonus points

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Spring	Half term 3 January - February	Half term 4 February - April
Weeks	6 weeks	6 weeks
Module	Electricity and Light	Solutions and Particles
Key learning questions and concepts	<p>Use correct symbols to draw and understand a parallel and series electrical circuit.</p> <p>Understand the terms resistor, conductor and insulator voltage and current with reference to electricity</p> <p>Identify conductors and insulators through testing.</p> <p>Know and used terms opaque translucent transparent.</p> <p>Understand that light travels in straight lines but can be refracted and reflected.</p> <p>Know the colours of the light spectrum and how we see light</p>	<p>Know and use terms soluble, insoluble, solvent, solute, compounds.</p> <p>Mix and separate particles using different methods – distil, evaporate, chromatography, filter, dissolve, diffusion.</p> <p>Understand particle arrangements and behaviour of solids, liquids and gasses.</p> <p>Recognise reversible and irreversible change.</p>
Skills and abilities	<p>Be able draw electrical circuits using correct symbols.</p> <p>Use diagrams to show light travelling</p> <p>Dissect eyeball to locate parts</p>	<p>Carry out precise and safe testing and experimenting.</p> <p>Use scientific terms correctly</p> <p>Be able to explain introductory particle theories</p>
Extension and independence	Develop own questions and testing ideas.	Develop own questions and testing ideas. Use scientific vocabulary in longer more in-depth conclusions and descriptions
Feedback and assessment	<p>End of module self and teacher assessment.</p> <p>End of module open book progress checker.</p> <p>Ongoing written and verbal feedback</p>	<p>End of module self and teacher assessment.</p> <p>End of module open book progress checker.</p> <p>Ongoing written and verbal feedback</p>
Links to broader curriculum content	<p>Art – different primary colours science / art</p> <p>Colour mixing</p>	English – lots of vocabulary with similar meanings
Personal development and enrichment	<p>Volks electric railway (not open to public)</p> <p>Milne museum of electricity</p>	Field studies collecting water samples predicting components based on location
Celebration of achievement:	Work on display, special mention in assembly, message home, bonus points	Work on display, special mention in assembly, message home, bonus points

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Summer	Half term 5 April-May	Half term 6 May- July
Weeks	5 weeks	7.5 weeks
Module	Ecological Relationships	Cells and Reproduction
Key learning questions and concepts	<p>Explain how various animals are suited to their environment.</p> <p>Use different classification systems to group and identify animals.</p> <p>Draw and read food webs, chains and pyramids.</p> <p>Understand the effects of competition for resources on all living things.</p> <p>Understand genetic and environmental variation.</p> <p>Draw and label parts of a plant and understand methods of pollination.</p>	<p>Know the 7 life processes and be able to explain in simple terms.</p> <p>Identify names and locations of main organs of human body and basic structure of plants.</p> <p>Understand concept of cells tissues organs organ systems.</p> <p>Know parts of plant and animal cell and their function.</p> <p>Understand biological process involved in making new cells – reproduction, cell division mitosis meiosis.</p>
Skills and abilities	<p>Be able to talk about different environments and animal adaptations.</p> <p>Use various methods to identify and classify animals</p> <p>Be able to understand in detail different food chains, webs and pyramids</p>	<p>Separate parts of a plant and identify using microscope</p> <p>Make microscope slides with onion cells and cheek cells</p>
Extension and independence	<p>More open-ended tasks follow own related theories.</p> <p>Increased independence and choice about recording work and results</p>	<p>Develop games to understand parts of organ systems and how they interlink and parts of cell</p>
Feedback and assessment	<p>End of module self and teacher assessment.</p> <p>End of module open book progress checker.</p> <p>Ongoing written and verbal feedback</p>	<p>End of module self and teacher assessment.</p> <p>End of module open book progress checker.</p> <p>Ongoing written and verbal feedback</p>
Links to broader curriculum content	<p>Geography - habitats and environment</p>	<p>PSHE – SRE</p>
Personal development and enrichment	<p>Drusilla's Sealife centre</p> <p>Raystede Booth Museum</p>	<p>Visit local ponds and wildlife areas (Preston park rockery)</p> <p>Identify plants and parts of plants</p>
Celebration of achievement:	<p>Work on display, special mention in assembly, message home, bonus points</p>	<p>Work on display, special mention in assembly, message home, bonus points</p>