

## Curriculum Overview: Year 8 Science

Autumn 1	Autumn 2	Spring 1 (GCSE Starts)	Spring 2	Summer 1	Summer 2
<b>Topic covered</b> → Waves 1, Matter 2	<b>Topic covered</b> → Organisms 2	<b>Topic covered</b> → Electromagnets 1, Enquiry Process 2	<b>Topic covered</b> → Forces 2, Ecosystems 2	<b>Topic covered</b> → Earth 2,	<b>Topic covered</b> → Energy 2, Genes 2
<p><b>Links to prior learning</b> Waves 1:</p> <ul style="list-style-type: none"> <li>recognise that they need light in order to see things and that dark is the absence of light</li> <li>notice that light is reflected from surfaces</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>find patterns in the way that the size of shadows change.</li> <li>recognise that light appears to travel in straight lines</li> <li>use the idea that light travels in straight lines to explain that objects</li> </ul>	<p><b>Links to prior learning</b> Organisms 2:</p> <ul style="list-style-type: none"> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul> <p><b>Stretch and Challenge Enquiry</b> make a leaflet on why people smoke or take drugs, what the effects on the body are and what strategies there are for people to quit.</p>	<p><b>Links to prior learning</b> Electromagnets 1:</p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts,</li> <li>including cells, wires, bulbs, switches and buzzers</li> <li>identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> </ul>	<p><b>Links to prior learning</b> Forces 2:</p> <ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> <li>recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect</li> </ul> <p>Ecosystems 2:</p>	<p><b>Links to prior learning</b> Earth 2:</p> <p><b>Content of the Earth 2 and global warming are not specified in the KS2 NC</b></p> <p><b>Stretch and Challenge Enquiry</b> Evaluate what we are currently doing to prevent Global Warming and make suggestions of how we could improve or find solutions to the problems caused.</p>	<p><b>Links to prior learning</b> Energy 2:</p> <p><b>Content of the Energy 2 and work, energy and temperature are not specified in the KS2 NC</b></p> <p>Genes 2:</p> <ul style="list-style-type: none"> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same kind, but normally</li> </ul>

<p>are seen because they give out or reflect light into the eye explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes</p> <ul style="list-style-type: none"> <li>• use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> <li>• identify how sounds are made, associating some of them with something vibrating</li> <li>• recognise that vibrations from sounds travel through a medium to the ear</li> <li>• find patterns between the pitch of a sound and features of the object that produced it</li> <li>• find patterns between the volume of a sound and the strength of the vibrations that produced it</li> </ul>		<ul style="list-style-type: none"> <li>• recognise some common conductors and insulators, and associate metals with being</li> <li>• good conductors.</li> <li>• associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>• compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</li> <li>• use recognised symbols when representing a simple circuit in a diagram.</li> </ul> <p>Enquiry Process 2:</p> <ul style="list-style-type: none"> <li>• They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes</li> </ul>	<ul style="list-style-type: none"> <li>• identify and describe the functions of different parts of flowering plants: roots,</li> <li>• stem/trunk, leaves and flowers explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>• investigate the way in which water is transported within plants</li> </ul> <p><b>Stretch and Challenge Enquiry</b></p> <p>Explain the forces involved in a sport of your choosing. i.e. football/ tennis/basket ball</p> <p>Make a sports diary for an athlete who needed to do more cardiovascular work like a long distance runner and compare it to the sports diary of someone needing to do powerful strength</p>		<p>offspring vary and are not identical to their parents</p> <ul style="list-style-type: none"> <li>• identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul> <p><b>Stretch and Challenge Enquiry</b></p> <p>Explain the energy conversion of a household machine at home i.e. a fridge freezer and explain what the energy efficiency rating is. Research who Charles Darwin was and find out about his voyage to the Galapagos islands.</p>
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# The Bemrose School Curriculum



<ul style="list-style-type: none"> <li>recognise that sounds get fainter as the distance from the sound source increases</li> </ul> <p>Matter 2:  <b>Content of the Matter 2 explaining the properties and trends of the groups in the periodic table are not specified in the KS2 NC</b></p> <p><b>Stretch and Challenge Enquiry</b>          Explain how we can use the principals of light in fibre optics, telescopes and in magnification lens          Research how polymers are made and evaluate the use of plastics</p>		<p>over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information</p> <p><b>Stretch and Challenge Enquiry</b>          Research examples of the use of electricity in the house and how electricity gets from the powerstation through the National Grid to your home.          Look up an example of a recent scientific discovery that was controversial and evaluate its use within society. i.e. Stem cells</p>	<p>building such as a weight lifter or sprinter</p>		
<p><b>Equipment Needed</b></p>	<p><b>Wider Reading</b></p>		<p><b>Family activities</b></p>		
<p>Pen, pencil, ruler, calculator</p>	<p>Key stage 3 Bitesize: <a href="https://www.bbc.co.uk/bitesize/subjects/zng4d2p">https://www.bbc.co.uk/bitesize/subjects/zng4d2p</a>              Kay Science → <a href="https://www.kayscience.com/">https://www.kayscience.com/</a>              SENECA → <a href="https://app.senecalearning.com/dashboard/courses/add?Price=Free">https://app.senecalearning.com/dashboard/courses/add?Price=Free</a>              Science Journals for Kids → <a href="https://www.sciencejournalforkids.org/">https://www.sciencejournalforkids.org/</a></p>		<p>Watch the news.              Go on trips to the local powerstation or Natural History or Science Museum in London.  <b>Beat the Parent</b> – make flashcards and compete with your child. Who can get the most correct answers?              Support your child using educake for home learning.</p>		