



## Big Ideas in Science

Using a 'big ideas' approach, our curriculum builds increasingly complex knowledge of the products of science (substantive knowledge). Our curriculum explores links and provides multiple interactions with the five 'big ideas':

- Forces
- Energy, Waves and Magnets
- Matter and Reactions
- Earth
- Organisms, Ecosystems and Evolution

We connect less sophisticated ideas to more abstract ideas throughout the three-year curriculum. This approach enables pupils to be prepared to apply these concepts in new learning.

Big Idea	7	8	9	10	11
Forces	<ul style="list-style-type: none"> <li>• Energy</li> <li>• Forces</li> <li>• Earth and Space</li> <li>• Particle Model</li> </ul>	<ul style="list-style-type: none"> <li>• Metals and Making Materials</li> </ul>	<ul style="list-style-type: none"> <li>• Forces and Motion</li> <li>• Force Fields and Electromagnets</li> <li>• Atoms, Elements and Molecules</li> <li>• Current Electricity</li> </ul>	<ul style="list-style-type: none"> <li>• P5 Forces, Pressure, Elasticity and Motion</li> <li>• P8 Space Physics (Triple)</li> </ul>	<ul style="list-style-type: none"> <li>• C2 Chemical Bonding</li> <li>• P5 Forces, Newton's Laws and Momentum</li> </ul>
Energy, Waves, and Magnets	<ul style="list-style-type: none"> <li>• Energy</li> <li>• Fluids</li> </ul>	<ul style="list-style-type: none"> <li>• Sound</li> <li>• Light</li> <li>• Plant Reproduction and Growth</li> </ul>	<ul style="list-style-type: none"> <li>• Energy Transfers</li> <li>• Combustion</li> <li>• Force Fields and Electromagnets</li> <li>• Current Electricity</li> </ul>	<ul style="list-style-type: none"> <li>• B4 Photosynthesis</li> <li>• B4 Respiration</li> <li>• C5 Energy Transfer</li> <li>• P1 Energy</li> <li>• P2 Electricity (Part 1)</li> <li>• P4 Atomic Radiation</li> <li>• P6 Waves (Part 1)</li> </ul>	<ul style="list-style-type: none"> <li>• C5 Chemical Cells and Fuel Cells (Triple)</li> <li>• P2 Electricity (Part 2)</li> <li>• P6 Waves (Part 2)</li> <li>• P7 Magnetism</li> </ul>
Matter and Reactions	<ul style="list-style-type: none"> <li>• Particle Model and Fluids</li> <li>• Mixtures and Separation</li> <li>• Rocks</li> </ul>	<ul style="list-style-type: none"> <li>• Metals and Making Materials</li> <li>• Acids and Alkalies</li> </ul>	<ul style="list-style-type: none"> <li>• Combustion</li> <li>• Reactivity</li> <li>• Atoms, Elements + Molecules and Periodic Table</li> </ul>	<ul style="list-style-type: none"> <li>• B4 Photosynthesis</li> <li>• B4 Respiration</li> <li>• C1 Atoms</li> <li>• C1 Periodic Table</li> <li>• C2 Chemical Bonding</li> <li>• C3 Conservation of Mass and Calculations</li> <li>• C4 Reactivity of Metals</li> <li>• C5 Energy Transfer</li> <li>• C6 Rates of Reaction</li> <li>• C8 Chemical Analysis</li> <li>• P3 Changes of State and the Particle Model</li> </ul>	<ul style="list-style-type: none"> <li>• C2 Chemical Bonding</li> <li>• C3 Calculations</li> <li>• C4 Reactions of Acids</li> <li>• C4 Electrolysis</li> <li>• P4 Atomic Radiation</li> <li>• (Combined)</li> </ul>
Earth	<ul style="list-style-type: none"> <li>• Earth and Space</li> <li>• Rocks</li> </ul>	<ul style="list-style-type: none"> <li>• Metals and Making Materials</li> </ul>	<ul style="list-style-type: none"> <li>• Combustion</li> </ul>	<ul style="list-style-type: none"> <li>• B7 Ecology</li> <li>• C9 Earth's Atmosphere</li> <li>• C10 Using the Earth's Resource</li> <li>• P4 Atomic Radiation (Triple)</li> </ul>	<ul style="list-style-type: none"> <li>• C7 Crude Oil</li> <li>• P4 Atomic Radiation (Combined)</li> </ul>
Organisms, Ecosystems and Evolution	<ul style="list-style-type: none"> <li>• Cells, Tissues, Organs and Organ Systems</li> <li>• Sexual Reproduction in Animals</li> </ul>	<ul style="list-style-type: none"> <li>• Food and Nutrition</li> <li>• Breathing + Respiration and Muscles + Bones</li> <li>• Plant Reproduction and Growth</li> </ul>	<ul style="list-style-type: none"> <li>• Ecology and Unicellular Organisms</li> <li>• Genetics and Evolution</li> </ul>	<ul style="list-style-type: none"> <li>• B1 Eukaryotes and Prokaryotes</li> <li>• B2 Plant Tissues and Organs</li> <li>• B2 Health Issues, Circulation and Digestion</li> <li>• B3 Disease</li> <li>• B5 Nervous System</li> </ul>	<ul style="list-style-type: none"> <li>• B5 Homeostasis</li> <li>• B6 Genetics</li> <li>• B6 Evolution</li> <li>• B7 Ecology</li> </ul>