



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