

# Subject Overview Science – Year 9

Year 9 science builds the bridge between previous KS3 content and the upcoming GCSE content. In term 2 of year 9 we begin to introduce the major building blocks of GCSE biology, chemistry and physics, focusing on cells and organisation in biology, substances and their properties in chemistry and energy and particles in physics.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills	<p><b>Cells in depth (24 Lessons)</b> Study cell structure and explore how substances move into and out of cells.</p> <p><b>Atomic structure and the periodic table (24 Lessons)</b> Explore atomic structure and periodic trends using particle data and element properties</p>	<p><b>Assessment 1</b></p> <ul style="list-style-type: none"> <li>• Cells in depth</li> <li>• Atomic structure</li> <li>• Building blocks of chemistry</li> <li>• Forces and their interactions</li> </ul> <p><b>Energy stores &amp; systems (20 Lessons)</b> Investigate energy stores, transfers, and calculations using equations and standard scientific units.</p>	<p><b>Organ systems (28 Lessons)</b> Examine human body systems and how lifestyle affects health and physiological function.</p>	<p><b>Bonding, structure and the properties of matter (20 Lessons)</b> Understand chemical bonding and link it to material structure and physical properties.</p>	<p><b>Assessment 2</b></p> <ul style="list-style-type: none"> <li>• Organ systems</li> <li>• Bonding, structure and the periodic table</li> <li>• Energy stores and systems</li> </ul> <p><b>Particle model of matter (20 Lessons)</b> Use particle theory and equations to explain material properties and behavior.</p>	<p><b>Bioenergetics (20 Lessons)</b> Explore respiration and photosynthesis, and how conditions affect energy processes in nature.</p>
Beyond The Curriculum	<p><b>Places to visit</b> Center of the cell London Science museum London</p> <p><b>Listening</b> In Our Time: The Cell Cell&amp;Gene: the podcast</p> <p><b>Reading:</b> “Cells: An Owner’s Handbook” by Carolyn Fisher</p> <p><b>Websites</b> <a href="#">Cells Alive! Interactive Cell Models</a></p>	<p><b>Places to visit</b> London Science Museum Nuclear power station visitor center</p> <p><b>Suggested reading:</b> Power trip: The story of energy The Shocking Truth about Energy: ... and How It Shapes Our World</p>	<p><b>Places to visit</b></p> <ul style="list-style-type: none"> <li>• Sheffield Botanical Gardens</li> <li>• London Science Museum</li> <li>• Chester Zoo</li> <li>• Old Operating Theatre museum and herb garden</li> </ul> <p><b>Websites:</b> Innerbody Anatomy and physiology</p>	<p><b>Places to visit</b></p> <ul style="list-style-type: none"> <li>• London Science Museum</li> </ul> <p><b>Reading:</b> <i>Stuff Matters</i> – Mark Miodownik</p> <p><i>Molecules: The Elements and the Architecture of Everything</i> – Theodore Gray</p>	<p><b>Places to visit</b></p> <ul style="list-style-type: none"> <li>• London Science Museum</li> </ul> <p><b>Reading:</b> <i>States of Matter: A Visual Guide to Understanding Physical Science</i> – Brian Knapp</p> <p><i>The Way Things Work Now</i> – David Macaulay</p> <p><i>Molecules</i> – Theodore Gray</p>	<p><b>Places to visit</b></p> <ul style="list-style-type: none"> <li>• Royal Botanical Garden, Edinburgh</li> <li>• Eden Project UK</li> <li>• London Science Museum</li> </ul> <p><b>Reading:</b> <i>The Body: A Guide for Occupants</i> – Bill Bryson <i>The Human Body Factory</i> – Dan Green &amp; Edmond Davis <i>The Hidden Life of Trees (Young Readers Edition)</i> – Peter Wohlleben</p>