

# Subject Overview Combined Science – Year 10

Year 10 is when students fully embark on their GCSE journey. They begin to build a more in depth understanding of the concepts learned earlier in each theme and develop aspirations of a career in STEM.

Throughout year 10 the students will use experimental techniques, critical thinking and considered questioning to explore a range of topics in biology, chemistry and physics.

	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
Knowledge & Skills	<p><b>Quantitative Chemistry (18 Lessons)</b> Calculate chemical quantities using algebra, ratios, and reaction yields.</p> <p><b>Domestic Electricity (20 Lessons)</b> Study home electricity use, appliance power calculations, &amp; domestic safety measures.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Assessment 1</b></p> <ul style="list-style-type: none"> <li>• Bioenergetics</li> <li>• Bonding, Structure &amp; the Properties of Matter</li> <li>• Particle Model of Matter</li> </ul> </div>	<p><b>Infection &amp; Response (15 Lessons)</b> Explore how pathogens cause disease and how prevention and body defences combat them.</p> <p><b>Energy Changes (10 Lessons)</b> Explore, calculate, and apply energy changes in chemical reactions using experimental data.</p> <p><b>Nuclear Physics (10 Lessons)</b> Explore ionising radiation, its hazards, and applications in medicine, industry, and energy.</p>	<p><b>Chemical Changes (15 Lessons)</b> Explore industrial chemical reactions and explain metal extraction using experimental techniques.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Assessment 2</b></p> <ul style="list-style-type: none"> <li>• Infection &amp; Response</li> <li>• Energy Changes</li> <li>• Nuclear Physics</li> </ul> </div> <p><b>Forces in Depth (15 Lessons)</b> Investigate contact and non-contact forces, resolving forces and work done.</p>	<p><b>Chemistry of the Atmosphere (10 Lessons)</b> Examine human impact on the atmosphere and effects of bias in scientific understanding.</p> <p><b>Waves in Depth (15 Lessons)</b> Study wave properties, apply wave equations, and assess risks and uses of EM waves.</p>	<p><b>Forces in Motion (20 Lessons)</b> Explore how unbalanced forces affect motion using equations, graphs, and calculations.</p> <div style="border: 1px solid black; padding: 5px;"> <p><b>Assessment 3</b></p> <ul style="list-style-type: none"> <li>• Biology Paper 1</li> <li>• Chemistry Paper 1</li> <li>• Physics Paper 1</li> </ul> </div>	<p><b>Adaptation and Interdependence (15 Lessons)</b> Examine how organisms adapt physically and behaviourally to survive in their environments.</p> <p><b>Nutrient Cycles and human impact on the environment (15 Lessons)</b> Study Earth's nutrient cycles and evaluate human impact on these natural processes.</p>
Beyond The Curriculum	<p><b>Suggested places to visit:</b></p> <ul style="list-style-type: none"> <li>• National Coal Mining Museum for England (Wakefield)</li> </ul> <p><b>Suggested reading:</b></p> <ul style="list-style-type: none"> <li>• Khan Academy: Chemistry – Stoichiometry &amp; Moles</li> </ul>	<p><b>Suggested places to visit:</b></p> <ul style="list-style-type: none"> <li>• Thackray Museum of Medicine (Leeds)</li> </ul> <p><b>Suggested reading:</b></p> <ul style="list-style-type: none"> <li>• “BBC Science Focus” Magazine</li> <li>• NHS Website – Infectious Diseases</li> </ul>	<p><b>Suggested places to visit:</b></p> <ul style="list-style-type: none"> <li>• Science + Industry Museum (MOSI – Manchester)</li> </ul> <p><b>Suggested reading:</b></p> <ul style="list-style-type: none"> <li>• Royal Society of Chemistry (RSC) – Chemical Changes Resources</li> <li>• Physics Classroom – Forces</li> </ul>	<p><b>Suggested places to visit:</b></p> <ul style="list-style-type: none"> <li>• National Science and Media Museum (Bradford)</li> </ul> <p><b>Suggested reading:</b></p> <ul style="list-style-type: none"> <li>• Royal Society of Chemistry (RSC) – Atmospheric Chemistry</li> <li>• Institute of Physics (IOP) – Waves Resources</li> </ul>	<p><b>Suggested places to visit:</b></p> <ul style="list-style-type: none"> <li>• Calderdale Industrial Museum (Halifax)</li> </ul> <p><b>Suggested reading:</b></p> <ul style="list-style-type: none"> <li>• “Physics Review” by IOP</li> <li>• “New Scientist” – Environment and Physics Sections</li> </ul>	<p><b>Suggested places to visit:</b></p> <ul style="list-style-type: none"> <li>• Yorkshire Wildlife Park (Doncaster)</li> </ul> <p><b>Suggested reading:</b></p> <ul style="list-style-type: none"> <li>• BBC iPlayer category: Science &amp; Nature</li> <li>• Website: BBC News Science &amp; Environment</li> </ul>
<p><b>Extra revision:</b> <a href="#">YouTube: Free science lessons</a> <a href="#">Cognito Combined Science Biology</a>, <a href="#">Cognito Combined Science Chemistry</a>, <a href="#">Cognito Combined Science Physics</a> <a href="#">BBC bitesize</a></p>						