

Subject	Science		
	Interpretation of National Curriculum into Year group Endpoints		
Year	Term 1	Term 2	Term 3
11	<p>Students will describe and explain the concepts of:</p> <p><b>B6 Inheritance, variation and evolution</b></p> <ul style="list-style-type: none"> <li>• single gene inheritance and single gene crosses with dominant and recessive phenotypes</li> <li>• sex determination in humans</li> <li>• genetic variation in populations of a species</li> <li>• the process of natural selection leading to evolution</li> <li>• the evidence for evolution</li> <li>• developments in biology affecting classification</li> <li>• the importance of selective breeding of plants and animals in agriculture</li> <li>• the uses of modern biotechnology including gene technology; some of the practical and ethical considerations of modern biotechnology</li> </ul> <p><b>B7 Ecology</b></p> <ul style="list-style-type: none"> <li>• levels of organisation within an ecosystem</li> <li>• some abiotic and biotic factors which affect communities; the importance of interactions between organisms in a community</li> <li>• how materials cycle through abiotic and biotic components of ecosystems</li> <li>• the role of microorganisms (decomposers) in the cycling of materials through an ecosystem</li> <li>• organisms are interdependent and are adapted to their environment</li> <li>• the importance of biodiversity</li> <li>• methods of identifying species and measuring distribution, frequency and abundance of species within</li> </ul>	<p>Students will complete PPEs, review these papers and then follow a structured revision program of all 24 units of study that make up GCSE Combined Science.</p>	<p>Students will take the six exams which make up the assessment for GCSE Combined Science.</p>

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	<p>a habitat</p> <ul style="list-style-type: none"> <li>• positive and negative human interactions with ecosystems</li> </ul> <p><b>C7 Organic chemistry</b></p> <ul style="list-style-type: none"> <li>• carbon compounds, both as fuels and feedstock, and the competing demands for limited resources</li> <li>• fractional distillation of crude oil and cracking to make more useful materials</li> </ul> <p><b>C8 Chemical analysis</b></p> <ul style="list-style-type: none"> <li>• identification of common gases distinguishing between pure and impure substances</li> <li>• separation techniques for mixtures of substances: filtration, crystallisation, chromatography, simple and fractional distillation</li> </ul> <p><b>C9 Chemistry of the atmosphere</b></p> <ul style="list-style-type: none"> <li>• evidence for composition and evolution of the Earth's atmosphere since its formation</li> <li>• evidence, and uncertainties in evidence, for additional anthropogenic causes of climate change</li> <li>• potential effects of, and mitigation of, increased levels of carbon dioxide and methane on the Earth's climate</li> <li>• common atmospheric pollutants: sulphur dioxide, oxides of nitrogen, particulates and their sources</li> </ul> <p><b>C10 Using resources</b></p> <ul style="list-style-type: none"> <li>• the Earth's water resources and obtaining potable water.</li> <li>• life cycle assessment and recycling to assess environmental impacts associated with all the stages of</li> </ul>		

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	<p>a product's life</p> <ul style="list-style-type: none"> <li>• the viability of recycling of certain materials</li> </ul> <p><b>P5 Forces</b></p> <ul style="list-style-type: none"> <li>• forces and fields: electrostatic</li> </ul> <p><b>P6 Waves</b></p> <ul style="list-style-type: none"> <li>• amplitude, wavelength, frequency, relating velocity to frequency and wavelength</li> <li>• transverse and longitudinal waves</li> <li>• electromagnetic waves, velocity in vacuum; waves transferring energy; wavelengths and frequencies from radio to gamma-rays</li> <li>• velocities differing between media: absorption, reflection, refraction effects</li> <li>• production and detection, by electrical circuits, or by changes in atoms and nuclei</li> <li>• uses in the radio, microwave, infra-red, visible, ultra-violet, X-ray and gamma ray regions, hazardous effects on bodily tissues.</li> </ul> <p><b>P7 Magnetism and electromagnetism</b></p> <ul style="list-style-type: none"> <li>• exploring the magnetic fields of permanent and induced magnets, and the Earth's magnetic field, using a compass</li> <li>• magnetic effects of currents, how solenoids enhance the effect</li> <li>• how transformers are used in the national grid and the reasons for their use.</li> </ul>		