

## 1c. Curriculum Overview: Science



SAINTS PETER AND PAUL  
CATHOLIC HIGH SCHOOL

Year 10 Science			
Refer to	Term 1 – September to December	Term 2 – January to March	Term 3 – April to July
GCSE Specification	<p><b><u>HT1 Atomic Structure, Bonding and Radiation</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>Atomic structure/development of the model atom</li> <li>Atoms and radiation</li> <li>Development of the periodic table</li> <li>Chemical bonds – ionic, covalent, metallic</li> <li>Bonding and structure in relation to properties</li> <li>Structure and bonding of carbon</li> <li>Nanoparticles</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>HT1 Assessment 1: Atomic Structure and Bonding</li> <li>HT1 Assessment 2: Bonding comparison</li> <li>HT1 Assessment 3 Radiation</li> </ul> <p><u>What are the standardised homework tasks?</u> Educake is used as the standardised homework platform</p> <p><b><u>HT2 Cell Biology</u></b></p> <p><u>What are the students learning?</u></p>	<p><b><u>HT3 Energy and Electricity</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>Energy changes in a system (<math>E_k</math>, <math>E_e</math>, <math>E_p</math>)</li> <li>Power</li> <li>Conservation and dissipation of energy</li> <li>Energy transfer and Hooke's Law</li> <li>Efficiency</li> <li>National and global energy resources</li> <li>Current, potential difference and resistance</li> <li>Series and parallel circuits</li> <li>Domestic uses and safety</li> <li>Energy transfers</li> <li>The National Grid</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>HT3 Assessment 1: Energy</li> <li>HT3 Assessment 2: Circuits, Current &amp; Potential Difference</li> <li>HT3 Assessment 3: Resistance</li> </ul> <p><u>What are the standardised homework tasks?</u> Educake is used as the standardised homework platform</p> <p><b><u>HT4 Infection and Response and Bioenergetics</u></b></p>	<p><b><u>HT5 Particle Model of Matter and Quantitative Chemistry</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>Particle model of matter</li> <li>Internal energy and energy transfers</li> <li>Particle model and pressure</li> <li>Chemical measurements</li> <li>Conservation of mass</li> <li>Quantitative interpretation of chemical equations</li> <li>Amounts of substances, masses and moles</li> <li>Concentration of solutions</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>HT5 Assessment 1: Particles of Matter</li> </ul> <p><u>What are the standardised homework tasks?</u> Educake is used as the standardised homework platform</p>



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	<ul style="list-style-type: none"> <li>• Cell structure</li> <li>• Microscopy</li> <li>• Cell division, cancer</li> <li>• Transport in cells</li> <li>• Principles of organisation</li> <li>• The human digestive system</li> <li>• The heart and blood vessels</li> <li>• Blood</li> <li>• Coronary heart disease</li> <li>• Plant tissues, organs, systems</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>• HT2 Assessment 1: Cells and Exchange</li> <li>• HT2 Assessment 2: Digestion and Enzymes</li> </ul> <p><u>What are the standardised homework tasks?</u> Educake is used as the standardised homework platform</p>	<p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• Health issues</li> <li>• Effect of lifestyle</li> <li>• Coronary heart disease</li> <li>• Cancer</li> <li>• Communicable diseases (including plants and their defences)</li> <li>• Human defence systems</li> <li>• Vaccination</li> <li>• Drugs to treat disease</li> <li>• Discovery and development of drugs</li> <li>• Photosynthesis</li> <li>• Uses of glucose</li> <li>• Respiration</li> <li>• Response to exercise</li> <li>• Metabolism</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>• HT4 Assessment 1: Limiting Factors</li> <li>• HT4 Assessment 2: Photosynthesis and Respiration</li> </ul> <p><u>What are the standardised homework tasks?</u> Educake is used as the standardised homework platform</p>	<p><u>HT6 Chemical Changes and Energy Changes</u></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• Reactivity of metals</li> <li>• Reactions of acids</li> <li>• Electrolysis</li> <li>• Purity, formulations and chromatography</li> <li>• Identification of common gases</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>• HT6 Assessment 1: Electrolysis and extraction</li> <li>• HT6 Assessment 2: Chemical Analysis</li> <li>• End of Year 10 Paper 1 Assessment</li> </ul> <p><u>What are the standardised homework tasks?</u> Educake is used as the standardised homework platform</p>
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Year 11 Science			
Refer to	Term 1 – September to December	Term 2 – January to March	Term 3 – April to July
GCSE Specification	<p><b><u>HT1 Bioenergetics and Ecology</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• Photosynthesis</li> <li>• Uses of glucose</li> <li>• Respiration</li> <li>• Response to exercise</li> <li>• Metabolism</li> <li>• Adaptations, interdependence and competition</li> <li>• Organisation of an ecosystem</li> <li>• Biodiversity and the effect of human interaction on ecosystems</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>• HT1 Assessment 1: Ecology</li> </ul> <p><u>What are the standardised homework tasks?</u></p> <ul style="list-style-type: none"> <li>• <a href="http://www.my-gcsescience.com">www.my-gcsescience.com</a></li> <li>• <a href="https://my.educake.co.uk/">https://my.educake.co.uk/</a></li> </ul> <p><b><u>HT2 Energy Changes, Rates and Organic Chemistry</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• pH scale and neutralisation</li> <li>• Rate of reaction and collision theory</li> <li>• Effect of temperature and reaction between acids and metals</li> </ul>	<p><b><u>HT3 Matter and Waves</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• Particle model of matter</li> <li>• Internal energy and energy transfers</li> <li>• Particle model and pressure</li> <li>• Waves in air, fluids and solids</li> <li>• Electromagnetic waves</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>• HT3 Assessment 1: Density and Particle models of matter</li> <li>• HT3 Assessment 2: Waves</li> </ul> <p><u>What are the standardised homework tasks?</u></p> <ul style="list-style-type: none"> <li>• <a href="http://www.my-gcsescience.com">www.my-gcsescience.com</a></li> <li>• <a href="https://my.educake.co.uk/">https://my.educake.co.uk/</a></li> </ul> <p><b><u>HT4 Inheritance, Variation and Evolution</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• Inheritance, variation and evolution</li> <li>• Reproduction</li> <li>• Meiosis</li> <li>• DNA</li> </ul> <p>Genetic inheritance, inherited disorders, sex determination</p> <ul style="list-style-type: none"> <li>• Variation</li> <li>• Evolution</li> <li>• Selective breeding</li> </ul>	<p><b><u>HT5 Chemistry of the Atmosphere and Resources</u></b></p> <p><u>What are the students learning?</u></p> <ul style="list-style-type: none"> <li>• Composition and evolution of the Earth's atmosphere</li> <li>• Carbon dioxide and methane as greenhouse gases</li> <li>• Common atmospheric pollutants and their resources</li> <li>• Using the Earth's resources and obtaining potable water</li> <li>• Life cycle assessment and recycling</li> </ul> <p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"> <li>• HT5 and HT6 use of 2018, 2019 and 2020 past examination papers</li> </ul> <p><u>What are the standardised homework tasks?</u></p> <ul style="list-style-type: none"> <li>• <a href="http://www.my-gcsescience.com">www.my-gcsescience.com</a></li> <li>• <a href="https://my.educake.co.uk/">https://my.educake.co.uk/</a></li> </ul>



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	<ul style="list-style-type: none"><li>• Effect of surface area and reaction of acids and carbonates</li><li>• Effect of temperature</li><li>• Reaction profiles and catalysts</li><li>• Exo and endothermic reactions</li><li>• Soluble salts</li><li>• Reactivity series, extraction of metals and metal oxides</li><li>• Reversible reactions</li><li>• Electrolysis</li><li>• Organic chemistry</li><li>• Chemical analysis</li></ul>	<ul style="list-style-type: none"><li>• Genetic engineering</li><li>• Evidence for evolution</li></ul>	
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	<p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"><li>• HT2 Assessment 1: Rates of Reaction</li><li>• Mock Examinations</li></ul> <p><u>What are the standardised homework tasks?</u></p> <ul style="list-style-type: none"><li>• <a href="http://www.my-gcsescience.com">www.my-gcsescience.com</a></li><li>• <a href="https://my.educake.co.uk/">https://my.educake.co.uk/</a></li></ul>	<p><u>What are the key standardised assessments?</u></p> <ul style="list-style-type: none"><li>• HT4 Assessment1: Inherited disorders</li><li>• HT4 Assessment 2: Natural selection &amp; Classification</li><li>• Mock Examinations</li></ul> <p><u>What are the standardised homework tasks?</u></p> <ul style="list-style-type: none"><li>• <a href="http://www.my-gcsescience.com">www.my-gcsescience.com</a></li><li>• <a href="https://my.educake.co.uk/">https://my.educake.co.uk/</a></li></ul>	
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