

CURRICULUM MAP – Year 11 COMBINED SCIENCE

Each topic will cover the key enquiry processes, relevant maths skills and cultural capital.

CL = Careers Links which supports the Catholic Social Teaching (CST) strand of Dignity of Work and Participation



ST JAMES'
CATHOLIC HIGH SCHOOL

KEY
Biology
Chemistry
Physics

HT1:	HT2:	Assessment	HT3:	HT4:	Assessment	HT5
<p>INTENT <u>Ecology 4.7</u> In this section we will explore how humans are threatening biodiversity as well as the natural systems that support it. We also learn the factors which speed up the rate of decay and sustainable food production.</p> <p>CST Common Good and Solidarity - Looking after our planet for future generations. Conserving energy resources, sustainable food production. Reducing carbon footprint by shopping local and reducing food miles, supporting local farmers. Interrelationships and biodiversity on a local and global scale, e.g. deforestation issues.</p> <p>Delivered in the warmer months for fieldwork</p> <p>CL- Ecologist, Marine Biologist, Conservationist, Sustainability Officer.</p> <p><u>Organic Chemistry 5.7</u></p>	<p>INTENT <u>Waves 6.6</u> We learn how waves carry energy from one place to another and how they carry information, including deflection of waves and sound waves.</p> <p>Link to atomic structure and taught before 5.9</p> <p>CL- Audiologist, Acoustic Engineer, Seismologist, Optometrist, Sound Engineer, Lightning Designer.</p> <p><u>Inheritance, Variation and Evolution 4.6</u> We study DNA structure, cloning and the theories of evolution and speciation.</p> <p>CST Dignity – Each one of us is unique and beautiful and created in God’s image. People with living with genetic disorders deserve dignity.</p> <p>Link to non-communicable diseases in 4.3</p>	<p>Students will be assessed by a series of end of topic tests followed by a larger MOCK assessment at the end of the term.</p>	<p>INTENT <u>Magnetism 6.7</u> We learn about permanent and induced magnetism and how a magnet moving in a coil can produce electric current and also that when current flows around a magnet it can produce movement. We learn about Fleming’s Left Hand Rule and the Motor Effect.</p> <p>CL- Rail Technician, Sound Engineer, Radiologist</p> <p><u>Using Resources 5.10</u> In this topic, we learn that in order to operate sustainably, chemists seek to minimise the use of limited resources, use of energy, waste and environmental impact in the manufacture of products. Chemists also aim to dispose of products at the end of their useful life in ways that ensure that materials and stored energy is utilised. We study the Haber Process.</p> <p>CST Option for the Poor – the Haber Process has allowed enough fertiliser to be made</p>	<p>INTENT</p> <p>MOCK EXAMS</p> <p>REVISION</p> <p>INTERLEAVING</p>	<p>Students will be assessed by a series of end of topic tests followed by a second MOCK or interleaved paper at the end of HT3.</p>	<p>INTENT</p> <p><u>Space</u> We revisit solar system, the life cycle of a star and how the red shift theory helps us to understand how the universe is expanding.</p> <p>CL- astronomer, Astronaut, Geospatial Technician.</p>

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<p>We learn that a great variety of carbon compounds is possible because carbon atoms can form chains and rings linked by C-C bonds. We also learn about alkenes, alcohols and polymers.</p> <p>Link to enzymes, DNA as a polymer and inheritance</p> <p>CL- Petroleum engineer, Offshore drilling worker.</p> <p>Forces 6.5 We learn about forces and their interactions, forces in motion, Newton's Laws of Motion and Momentum. We learn about moments, levers and gears, pressure differences in fluids and atmospheric pressure.</p> <p>Link to homeostasis and response (reaction times)</p> <p>CL- Engineer.</p> <p>Chemical Analysis 5.8 We learn about the range of qualitative tests to detect specific chemicals, including how to test for ions.</p>	<p>CL- Genetic counsellor and palaeontologist</p> <p>Chemistry of the Atmosphere 5.9 We learn that the Earth's atmosphere is dynamic and forever changing. The causes of these changes are sometimes man-made and sometimes part of natural cycles.</p> <p>CST Creation and the Environment – Consider how are actions are accelerating climate change</p> <p>Link to Ecology and Organic Chemistry</p> <p>CL- Environmental Officer, Energy Analyst, Glaciologist.</p>		<p>to enable more crop growth in the developing world</p> <p>Link to chemistry of the atmosphere</p> <p>CL- Environmental Chemist, Waste management.</p> <p>Homeostasis and Response 4.5 We learn the structure and function of the nervous and hormonal system. Students also study the brain and the eye as two sensory organs and also the control of body temperature and water and nitrogen balance. We also learn about plant hormones.</p> <p>CST Dignity – People who receive fertility treatment have a right to dignity.</p> <p>Link to forces (reaction times)</p> <p>CL- Neurosurgeon, Optician, Dietician, Nephrologist.</p>			
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<p>Link to particle theory (Y10)</p> <p>CL- Environmental Officer, Forensics, Glass artist.</p>						
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