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### Curriculum Intent

To gain mastery in science and prepare for experiences beyond schooling. We aim for learners to become successful learners who continue to build on Catholic ethos and enjoy learning, make progress and achieve. Plan and prepare learners to be confident individuals who lead safe, healthy, fulfilling lives and be responsible citizens who make a positive contribution to society.  
 The A Level Biology course is an excellent starting point for many professional careers. Traditional areas include Medicine, Dentistry, Pharmacy and Veterinary Science. Other areas include Biotechnology, Food Science, Microbiology, Pharmacology, Forensic Science, Genetic Engineering, Cell Biology, Physiotherapy and Sports Science. Education and Research could also be considered.

	Term 1	Term 2	Term 3
<b>Implementation</b> <i>Year 12</i>	Biological molecules Monomers and polymers Carbohydrates, Lipids, Proteins Nucleic acids are important information-carrying molecules, ATP, Water Inorganic ions Cells - Cell structure, Stem cells and cell division, Transport across cell membranes Cell recognition and the immune system	Organisms exchange substances with their environment. Surface area to volume ratio Gas exchange Digestion and absorption Mass transport Genetic information, variation and relationships between organisms. DNA, genes and chromosomes. Protein synthesis.	Genetic - mutation and meiosis Genetic diversity and adaptation Species and taxonomy. Biodiversity within a community Investigating diversity  Practical Skills
<b>Impact Assessment</b>	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills
	Term 1	Term 2	Term 3
<b>Implementation</b> <i>Year 13</i>	Communication and homeostasis Excretion as an example of homeostatic control Neuronal communication Hormonal communication Plant and animal responses	Photosynthesis Respiration, Cellular control Patterns of inheritance Manipulating genomes Cloning and biotechnology Ecosystems, Populations and sustainability	Practical skills and revision
<b>Impact Assessment</b>	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations and A Level Examination	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations and A Level Examination	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations and A Level Examination

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<b>Implementation</b> <i>Year 12</i>	Term 1	Term 2	Term 3
	<b>Physical Chemistry:</b> Physical chemistry Atomic structure Amount of substance Organic chemistry Introduction to organic chemistry Alkanes Halogenoalkanes	Bonding Energetics Kinetics Alkenes Alcohols Organic analysis	Chemical equilibria, Le Chatelier's principle and Kc Oxidation, reduction and redox equations Periodicity Group 2, the alkaline earth metals Group 7(17), the halogens
<b>Impact Assessment</b>	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Synoptic Assessments	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Synoptic Assessments	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Synoptic Assessments
<b>Implementation</b> <i>Year 13</i>	Term 1	Term 2	Term 3
	Thermodynamics Rate equations Equilibrium constant Kp for homogeneous systems Electrode potential and electrochemical cells Acids and bases Organic chemistry Optical isomerism Aldehydes and ketones Carboxylic acids and derivatives Aromatic chemistry	Inorganic chemistry Properties of Period 3 elements and their oxides Transition metals Reactions of ions in aqueous solution Amines Polymers Amino acids, proteins and DNA Organic synthesis Nuclear magnetic resonance spectroscopy Chromatography	Practical skills
<b>Impact Assessment</b>	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations, Synoptic Assessments	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations, Synoptic Assessments	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations, , Synoptic Assessments

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<b>Implementation</b> <i>Year 12</i>	Term 1	Term 2	Term 3
	Measurements and their errors Use of SI units and their prefixes Limitation of physical measurements Estimation of Physical Quantities Particles and radiation Particles Electromagnetic radiation and quantum phenomena Waves Progressive and stationary waves Refraction, diffraction and interference	Mechanics and materials Forces, energy and momentum Materials Electricity Current electricity	Further mechanics and thermal physics Periodic motion Thermal physics Ideal Gases  Practical skills
<b>Impact</b> <i>Assessment</i>	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Synoptic Assessments	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Synoptic Assessments	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Synoptic Assessments
<b>Implementation</b> <i>Year 13</i>	Term 1	Term 2	Term 3
	Periodic motion Thermal physics Ideal Gases Capacitance Magnetic fields Electric fields	Nuclear physics Radioactivity Gravitational fields Astrophysics Telescopes Classification of Stars Cosmology	Practical skills
<b>Impact</b> <i>Assessment</i>	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations	Homework Tasks, Achievement Tests, End of Unit Assessments, Practical Skills, Mock A Level Examinations

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