Biology

The Biology Department of St Thomas More Catholic School aims to develop an appreciation of life on Earth and an understanding of how organisms function from a cellular level to the interactions in an ecosystem. Students will be aware of humans' impact on biodiversity and how this can be reduced. We aim for all students to read a variety of authentic scientific texts and critique the Biological claims they experience in 'real life'. They will have experience of a range of practical techniques and be able to design investigations from which valid conclusions can be drawn.

The Biology Department curriculum has been built around the following key concepts that students need to grasp:

The structure of cells, tissues, organs and organ systems and how these relate to their function.	Living organisms are interdependent.	Effective use of terminology to convey Biological concepts.	The appropriate type of enquiry to answer questions and the factors taken into account when collecting, recording and processing data.	Describing trends in data from investigations and use knowledge of Biological concepts to explain these trends

Key Stage 3 and 4

By the end of the Key Stage 3, students will make the connections between the key concepts studied, be aware of the big ideas underpinning Biological theory and will have developed accurate use of specialist vocabulary. They will understand that Biology is about working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review. They will evaluate their results and identify further questions arising from them.

The table below shows you how the key concepts delivered throughout Key Stage 3:

	Module 1	**Module 2**	**Module 3**
Year 7	Cells & Microscopy	Reproduction	Nutrition
Year 8	Photosynthesis & Interdependence	Respiration	Genetics & Biodiversity
Year 9	Cell Biology	Enzymes	Transport into and out of cells

Having developed their knowledge of the key concepts throughout Key Stage 3, the aim of Key Stage 4 is to ensure that students build a greater depth and breadth of understanding. They will be presented with different contexts in which to apply their crucial learning.

The table below shows you the topics pupils will study throughout Key Stage 4:

	Module 1	**Module 2**	**Module 3**
Year 10	Plant & animal organisation Health & disease	Health & disease Bioenergetics	Ecology
Year 11	Inheritance, variation & evolution	Homeostasis & response	Revision

Key Stage 5

Students studying Biology at Key Stage 5 will build on the knowledge, understanding and skills established at GCSE. Ideas are introduced within a range of settings, supporting learners to anchor their crucial learning of biological topics required at GCE level. Practical skills are embedded within the course and learners will develop a repertoire of practical skills.

Success at this key stage is led by a critical understanding of the key concepts below:

The structure of cells, tissues, organs and organ systems and how these relate to their function.	Living organisms are interdependent	Effective use of terminology to convey Biological concepts	The appropriate type of enquiry to answer questions and the factors taken into account when collecting, recording and processing data.	Describing trends in data from investigations and use knowledge of Biological concepts to explain these trends

The table below shows you the topics pupils will study throughout Key Stage 5:

	Module 1	**Module 2**	**Module 3**
Year 12	Cells and Chemicals for life	Transport and gas exchange systems Cell division and development	Pathogens, immunity and disease control Non Communicable Disease
Year 13	Genetics Gene Technologies Neuronal communication Respiration Conservation	Homeostasis Hormonal Communication Biotechnology Photosynthesis Plant responses	Revision