The Fisher Way: Curriculum

The Fisher Way aims to educate and inspire with joy, faith and love because we are an inclusive Catholic community.

Successful and resilient learners who aspire to and achieve excellence

Confident individuals who can explore and communicate effectively

Responsible citizens who are active, loving and wise in all their endeavours

Subject	Biology
Year Group	Year 12
Intent	**Successful and resilient learners:** who are able to use their biological knowledge and their scientific skills to investigate the world around them and solve problems associated with the living world. **Confident individuals:** who can apply their knowledge of organ systems, bioenergetics, genetics and the ecological interactions between species to understand and articulate what happens in the wider world. **Responsible citizens:** who are able to distinguish between what we CAN do as scientists and what is morally right for us to do as human beings. Pupils should be able to suggest solutions to some of the world's problems such as global warming and pollution and should be able to evaluate and debate the issues around current global issues such as

	Genetic Engineering, IVF, Pandemics and Stem cell research. They should be able to use their understanding to help them make informed decisions in later life to benefit both themselves and the wider world.					
Narrative	Students in Y12 Biology will take the knowledge from GCSE (primarily Physiology – cells, transport, organs system etc) and develop the depth of this quite significantly. More importantly students will develop almost exponentially their level of independence in both their approach to selecting the relevant information in their explanations of Biological phenomena and their ability to investigate experimentally. This will involve far greater levels of analysis of large quantities of data and decisions based as to the significance of trends and patterns observed. Many of the topics covered in Year 12 will form the foundations for more synoptic topics in Year 13.					
Half term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge (topics studied)	Biochemistry and cells	Transport and enzymes	Gas exchange and mass transport	Cell recognition and immunity	DNA replication cell division	Species taxonomy and biodiversity
Key skills	Practical skills, calculations, data analysis, graph interpretation, exam practice and skills	Practical skills, calculations, data analysis, graph interpretation, exam practice and skills	Practical skills, calculations, data analysis, graph interpretation, exam practice and skills, dissection techniques	Practical skills, calculations, data analysis, graph interpretation, exam practice and skills, aseptic techniques	Practical skills, calculations, data analysis, graph interpretation, exam practice and skills	Practical skills, calculations, data analysis, graph interpretation, exam practice and skills, calculation standard deviation/ index of biodiversity
Cultural capital & Careers	Importance of biological molecules. Cell structure forming the basis of life.	Factors that can affect enzyme activity, use of enzymes in industry	Dissection of fish, insects and heart. Importance of dissection. Factors that can affect/reduce lung and heart diseases.	Importance of vaccinations. Understanding of the HIV virus	The role of Watson and Crick in the understanding of DNA structure and it's importance to us today.	Understanding of evolution and natural selection. The importance of maintaining biodiversity.

	Reference to Pathology lab work STEM learning careers lesson			Careers in Astra Zeneca drug/vaccine development talk	Testing for genetic disorder	Visit to Chester Zoo to look at the work of conservation as a career
Assessment	October = 1hr Exam on Cells and Biochemistry	Examination in December 1hr 30 approx– covering Cells, Biochemistry and Transport		1hr30 Exam on all work to date including Immune System Weekly mini tests on Y12 content	Continued weekly mini tests on Y12 content leading up to mock exam in June	Y12 Mock examination week – AS Paper(s)