# 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

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| **Subject** | Biology |
| **Year Group** | Year 13 |
| **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.<br>**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.<br>**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 |

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| | 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** | The work in Y13 Biology builds on the foundations of Y12 but now looks at more synoptic units such as coordination (Nervous System/Endocrine), Genetics and Ecology. An even greater emphasis is now put on independently selecting relevant knowledge from the two year course to fully explain how biological concepts are linked i.e. how the use of drugs/toxins (Immune System Unit) affect nervous system coordination (Nervous system Unit) and synapses due to similar protein structures (Biochemical Unit). Students level of interpretation is underpinned by sound understanding of statistics which requires a higher level of appreciation and manipulation/calculation of data from tables and graphs. This synoptic approach to the topic culminates in a 25 mark essay in the 3rd paper that requires students to bring together the various strands of Biology to fully explore a chosen Biological Phenomenon. | | | | | |
| **Half term** | Autumn 1 | Autumn 2 | Spring 1 | Spring 2 | Summer 1 | Summer 2 |
| **Knowledge (topics studied)** | Photosynthesis and respiration, ecosystems and energy | nervous system and muscles, homeostasis | Genetic Inheritance and Gene Technology | Essay and Maths Skills focus | Revision | |
| **Key skills** | Synoptic analysis (Y12 & Y13 content). Statistics. Focus on practical skills - accuracy and observational | Deeper development of synoptic analysis | Equation use and use of maths - standard form, Hardy Weinburg etc... Analysis of text and extraction of key information. | Review of all mathematical and graphical skills. Synoptic skills coupled with essay planning and construction skills | Exam Skills - Analysis, interpretation, mathematical, application etc. | |
| **Cultural capital & Careers** | Real world application - focus on pollution (global warming) and impact of and real world applications within, farming | Links with sports and real world examples. Real world stories of drugs, venoms etc. and impact on synapses. Current issues with diabetes in context of homeostasis and | Wide range of current, real world events - from BBC news or Scientific Articles. i.e. Corona virus, genetic diseases, use of stem cells etc.. | Dependent on the focus area of revision - all cultural capital areas from Y12-13 can be covered. Often a use of current events can be used to revise work from last year. i.e. Ebola (3 yrs. ago) to | | |

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| | Ref to agriculture and food production | our consumption of sugar<br><br>PPT - Roles in the NHS (GPVid) | Use of STEM cells application in rehabilitation | coronavirus now used to revise Y12 immune system topic. | | |
| **Assessment** | October = 1hr 30 min Exam on Photosynthesis & Respiration | Mock Session 1 = 2 x 1hr 30 min papers in the mock exam. One on Y12 content and one on Y13 content so far | On going weekly tests covering all topics from Y12 to Y13 | Ongoing weekly tests …plus… Mock Session 2 = all three A2 papers from a previous year. | Final A2 Exams | Final A2 exams |