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	Physics
Year Group	Year 11
Intent	**Successful and resilient learners:** who are able to use their physics knowledge and their scientific skills to investigate the world around them and solve problems associated with the workings of the physical world. **Confident individuals:** who can apply their knowledge of forces, energy, waves and the particle model of matter to understand, interpret, challenge 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 Power Generation and Energy Use. They should be able to use the skills of working scientifically and their understanding to help them make informed decisions in later life to benefit both themselves and the wider world.
Narrative	Learning in year 11 builds on the work of the previous years. The work done in the P13 and P16 modules builds on the work done in year 9 in the P5 (Waves module), module P3 (Waves and Magnets) in year 8 and module P1 (Forces, Light and Sound) in year 7. The P14 module studied in year 11 builds on the work undertaken in the P9 (forces) module in year 10 and the P6 (Forces) module in year 9. The P16 module on radioactivity builds on the work done in module C5a (Atomic Structure) that is studied in Chemistry in year 9. Learners will be able to consolidate earlier learning on waves in year 9. Learners will know the electromagnetic spectrum and the different types of electromagnetic waves. Learners will be able to undertake evaluations of the advantages and disadvantages of the different electromagnetic waves. This information will be used to identify how the different waves can be used in different applications. All learners will know that momentum is conserved and be able to apply this knowledge to solve problems involving the interaction between objects. They will be able to calculate the forces involved using formula and information learned in earlier years. Learners will know how a pulley and gears work and the effect these have on the force required to carry out an action. They will able to describe how pulleys and gears are used in practical applications and the benefits of these. Learners will know the structure of an atom and be able to articulate the process of radioactive decay. Learners will be able to describe the different types of radioactive decay. Learners will know the hazards of radioactive materials and the effect that these materials have on cells. Learners will be able to describe why radioactive materials are used in different applications and evaluate the risks and benefits of using these materials for that purpose. All learners will develop a knowledge of the solar system and the universe of which we are a part. Learners will be able to describe how our understanding of the origins of the universe has changed and how the models for our solar system have changed over time. They will gain an understanding of the process of scientific observation and challenge, learning how interrogating theories and statements advances our understanding of the world.

Half term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2

Knowledge (topics studied)	P13 Electromagnetic waves and communication	P14 Momentum Moments levers and gears	P15 Radioactivity	P16 Electromagnetism P19 Space physics	Revision	Revision
Key skills	Description of waves and using specialist terminology such as wavelength and frequency	Understanding of ratios with respect to gears and levers	Calculations, graphs and half-life, using these calculations to give an age for certain materials	Scale, calculations and observations		
Cultural capital	Application to everyday life such as medical diagnosis and treatment. The usefulness of the atmosphere in sheltering us from gamma rays	Aristotle - give me lever long enough and I can move the earth	Development of the understanding of the atom, the development of the atom bomb and how atomic power is used to generate electricity	Awe and wonder. The development of knowledge from the earth to sun centred models and development of the big bang		
Assessment	End of Topic Test	End of Topic Test Mock Exam	End of Topic Test	End of Topic Test		GCSE Physics Exam