

## **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 9
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

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	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.									
	and the year 8 modu	les P3 (Waves and Ma	gnets) and P4 (work a	nd energy transfers). The	e P7 & P8 modules stu	died in the second				
	All learners will be able to identify and label the parts of longitudinal and transverse waves. They will be able to describe how light and sound interact with a boundary and draw the ray diagrams for these interactions. Learners will be able to calculate the speed of a wave, its frequency and its wavelength. They will be able to describe how frequency and amplitude affect the sound that is produced. The knowledge of waves is key knowledge required for the P13 (Electromagnetic waves) module studied in Year 11.									
Narrative	All learners will know the difference between a scalar and a vector quantity. They will be able to calculate the speed, velocity and acceleration of an object. Learner will know what work done is and how this relates to energy transfers. Learners will be able to apply this knowledge on calculating speed, velocity and acceleration to solve questions based on real world situations. The work on speed, velocity, acceleration and work done is key knowledge that is required for the P9 (Forces, Elasticity and Newton's Laws) and P10 (Energy Changes Involving Equations) modules studied in year 10 and the P14 (Momentum) module in Year 11.									
	All learners will be able to construct a circuit diagram for a series and parallel circuit. They will know how current, potential difference and resistance differ in a series and parallel circuit. Learners will be able to apply Ohm's law and the formula relating current, potential difference and resistance to circuit problems. Learners will have a knowledge of the characteristics of common electrical components and how these characteristics can be used in real world applications. This understanding of the electrical components and electrical circuits is key knowledge required for the P12 module (Domestic Electricity) studied in years 10 & 11 and the P16 module (Electromagnetism) studied in year 11.									
Half term	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2				
Knowledge (topics studied)	P5 waves	P5 Waves P6 Forces, scalar and vector quantities — distance/ displacement, velocity & acceleration	P6 Forces, scalar and vector quantities – distance / displacement, velocity & acceleration	P7 Electric charge, current, voltage and resistance	P7 Electric charge, current, voltage and resistance	P8 Power & efficiency, national/global energy resources				
	Half term  Knowledge (topics	The P5 and P6 moduland the year 8 modul half of the year build transfers)  All learners will be abound interact we a wave, its frequency produced. The knowledge speed, velocity, acceleration of an obapply this knowledge speed, velocity, acceleration difference a components and how and electrical circuits module (Electromagner)  Half term  Autumn 1  Knowledge (topics	The P5 and P6 modules studied in the first and the year 8 modules P3 (Waves and Ma half of the year build on the work done in the transfers)  All learners will be able to identify and label and sound interact with a boundary and dra a wave, its frequency and its wavelength. The produced. The knowledge of waves is key knowledge on calculating speed, speed, velocity, acceleration and work done P10 (Energy Changes Involving Equations)  All learners will be able to construct a circuit and resistance differ in a series and parallel potential difference and resistance to circuit components and how these characteristics and electrical circuits is key knowledge required in the product of the pro	Generation and Energy Use. They should be able to use the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the them make informed decisions in later life to benefit both the mand later life to benefit both the make half of the year build on and the year and label the parts of longituding and sound in the P2 module of a wave, its frequency and label the parts of longituding and sound in the P2 module of waves is key knowledge required for a vector and persistance to circuit diagram for a series and parallel circuit. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and resistance to circuit problems. Learners will be potential difference and parallel circuit. Learners will be potential difference and parallel circuit. Learners will be potential difference and parallel circuit diagram for a series and parallel circuit. Learners will be potential difference and parallel circuit diagram for a series and parallel circuit. Learners will be potential difference and p	The P5 and P6 modules studied in the first half of the year build on the work done in year and the year 8 modules P3 (Waves and Magnets) and P4 (work and energy transfers). The half of the year build on the work done in the P2 module in Year 7 (electricity) and the P4 r transfers)  All learners will be able to identify and label the parts of longitudinal and transverse waves and sound interact with a boundary and draw the ray diagrams for these interactions. Lear a wave, its frequency and its wavelength. They will be able to describe how frequency and produced. The knowledge of waves is key knowledge required for the P13 (Electromagnet All learners will know the difference between a scalar and a vector quantity. They will be all acceleration of an object. Learner will know what work done is and how this relates to ene apply this knowledge on calculating speed, velocity and acceleration to solve questions be asped, velocity, acceleration and work done is key knowledge that is required for the P9 (F P10 (Energy Changes Involving Equations) modules studied in year 10 and the P14 (Mom All learners will be able to construct a circuit diagram for a series and parallel circuit. They and resistance differ in a series and parallel circuit. Learners will be able to apply Ohm's la potential difference and resistance to circuit problems. Learners will have a knowledge of to components and how these characteristics can be used in real world applications. This une and electrical circuits is key knowledge required for the P12 module (Domestic Electricity) module (Electromagnetism) studied in year 11.  Half term  Autumn 1  Autumn 2  P5 Waves  P6 Forces, scalar and vector quantities — distance / displacement, velocity & acceleration	The P5 and P6 modules studied in the first half of the year build on the work done in year 7 in the P1 module (for and the year 8 modules P3 (Waves and Magnets) and P4 (work and energy transfers). The P7 & P8 modules stualf of the year build on the work done in the P2 module in Year 7 (electricity) and the P4 module studied in Year 1 (and the year 8 modules studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 2 (electricity) and the P4 module studied in Year 2 (electricity) and the P4 module studied in Year 1 (electricity) and the P4 module studied in Year 1 (electricity) and and transverse waves. They will be able to dand sound interact with a boundary and draw the ray diagrams for these interactions. Learners will be able to calculate the sep produced. The knowledge of waves is key knowledge required for the P13 (Electromagnetic waves) module studied in Year 10 and the P44 (Momentum) module in Year 2 (electricity) changes Involving Equations) modules studied in year 10 and the P14 (Momentum) module in Year 2 (electricity) electromagnetic in a series and parallel circuit. Learners will be able to apply Ohm's law and the formula relation potential difference and resistance to circuit problems. Learners will be able to apply Ohm's law and the formula relation potential difference and resistance to circuit problems. Learners will be able to apply Ohm's law and the formula relation to the P12 module (Electricity) studied in year 10 & 1 module (Electromagnetism) studied in year 11.    Half term				

Key skills	Using and rearranging equations, identifying limits to practical methods, conclusions and evaluations based on methods and data, calculations of uncertainty and resolution	Using a protractor, Drawing scaled diagrams, bisecting angles, using Pythagoras and trigonometry to find length and angles for vector	Using data, rearranging and applying equations, drawing d-t and v-t graphs, analysing v-t and d-t graphs.	Using and rearranging equations, drawing and interpreting graphs, practical skills	Using and rearranging equations, drawing and interpreting graphs, practical skills	Using and rearranging equations, comparing data and drawing conclusions.
Cultural capital	Light as a wave, development of the camera, how the eyes work, development of lenses	Use of vectors in navigation	Use of vectors in navigation	Faraday, a.c. vs d.c.	Faraday, a.c. vs d.c.	Impact of the industrial revolution on the environment, helping students make an informed choice about energy use.
Assessment	End of Topic Test	End of Topic Test	End of Topic Test	End of Topic Test	End of Topic Test	End of Topic Test Y9 Assessment