

Year 11: Physics Separate Science

Curriculum Intent: Year 11 Separate Physics builds on the foundations established in the Combined Science course. The more complex topics include electromagnetism and the Big Bang theory. The knowledge gained from the course provides students with a deeper insight into the subject, allowing them to tackle more complex problems and questions which link different areas. It also builds a solid knowledge base for progression to A-level Physics. Practical skills may include building and testing lenses, measuring reaction times and making a loudspeaker and a transformer.



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1
Key ideas and sequence of learning	Module P5 - Waves • Sound • Medical imaging • EM waves & matter • Lenses • Colour Module P4 - Magnetism • Magnetism • Electric current and fields • The motor effect • Electromagnetic induction • Generators • Transformers • Microphones and speakers	• Revision for PPE exams • Students sit their PPE exams	Students will review their PPE exam papers in detail to identify strengths and weaknesses Module P6 - Radioactivity • Radiation & the human body • Nuclear Fusion and Fission Module P8 – global challenges • Measuring motion • Stopping distance • Forces in collisions • Energy sources & resources • National grid • Mains electricity	Revision and consolidation Students will prepare for their GCSE exams in lessons with their teacher. Students begin their GCSE exams	Students finish their GCSE exams

Key Questions	1. How do we hear? 2. What is ultrasound and how is it used? 3. How do EM waves interact with matter? 4. How are waves used in medical imaging? 5. What are lenses and how do they work? 6. How do we perceive colour? 7. How can we demonstrate and explain magnetism? 8. How can we create a magnet using current? 9. How do electric motors work? 10. How do we generate electricity? 11. How do generators, transformers and microphones work?		1. How is radiation used in medicine? 2. How is energy released from nuclei? 3. What factors affect how quickly a car stops? 4. How does electricity get transmitted to our homes? 5. What sources of energy do we use and how long will they last?		
Vocabulary	• Magnetic field • Poles • Attraction • Repulsion • Motor effect • Flemings Left hand rule • Induction & induced • Alternator • Slip rings • Transformer • Microphone • Diaphragm • Loudspeaker		• Fusion and fission • Chain reaction • Thinking distance • Braking distance • Stopping distance • Transformers • Renewable		

Practical Skills	• Lenses investigation • Transformer demonstration • Making a loudspeaker • Making a transformer		• Measuring reaction time		
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