**Curriculum Intent**

In the Physics department we aim to develop scientifically knowledgeable, literate students who are able to understand and discuss current affairs, including global warming and conservation issues, technological development and who understand their responsibility as citizens of Earth. We aim to grow their natural curiosity about the world around them.

Students will build upon their KS3 and KS4 Science knowledge to further develop their understanding of scientific method, including the peer review process, in order to allow them to make important life choices. This process will enable them to evaluate and make informed decisions about information presented in different contexts.

**Curriculum Implementation – Year 12**

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|   | **Autumn** | **Spring** | **Summer** |
| HT1 | HT2 | HT3 | HT4 | HT5 | HT6 |
| **Year 12** | **BROAD** | **Core content, knowledge and skills** | Chapter 2 – Foundations of PhysicsChapter 5 – Work, Energy and PowerChapter 11 – Waves 1Chapter 12 – Waves 2 | Chapter 3 – MotionChapter 13 – Quantum Physics | Chapter 4 – Forces in ActionChapter 7 – Laws of motion and momentumChapter 8 – Charge and Current | Chapter 6 – MaterialsChapter 10 – Electrical circuits | Chapter 6 (cont.) – MaterialsChapter 9 – Energy, Power and ResistanceRevision for end of year 12 assessment. | **Year 13 work begins**Chapter 14 – Thermal Physics.Chapter 16 – Circular Motion. |
| NB – Module (chapter) 1 – Development of Practical Skills in Physics is taught throughout the whole course through practical work in the classroom. |
| **COHERENT** | **Prior knowledge required to access this unit**(All of the prior knowledge to access the course is referenced from the AQA Triple Science GCSE course. If a student has studied Combined Science at GCSE, the same topics will have been covered but the chapter numbers might not exactly match up). | P1 – Conservation and dissipation of energyP8.1 – Vectors and scalarsP12 – Wave propertiesP13 – Electromagnetic wavesP14 - Light | P4 – Electric circuitsP9 - Motion | P8 – Forces in balanceP10 – Forces and motion | P10.8 – Forces and elasticityP4 – Electric circuitsP5 – Electricity in the home | P10.8 – Forces and elasticityP3 – Energy resourcesP4 – Electric circuitsP5 – Electricity in the home | **Year 12 knowledge**Chapter 2 - Foundations of physicsChapter 4 – Forces in ActionChapter 7 – Laws of motion and momentum**GCSE knowledge**P2 – Energy transfer by heatingP6 – Molecules and matterP8 – Forces in balanceP10 – Forces and motion |
| **Assessment** | Simple assessment covering chapters 2 and 11.Core HW pieces set from chapters 2, 5, 11 and 12. | Two assessments, one covering chapters 2 and 5, the other covering chapters 11 and 12.Core HW pieces set covering chapters 3 and 13. | Two assessments, one covering chapters 2, 5 and 3, the other covering chapters 11, 12 and 13.Core HW pieces set from chapters 4, 7 and 8. | Two assessments, one covering chapters 2, 5, 3, 4 and 7 the other covering chapters 11, 12, 13 and 8.Core HW pieces set covering chapters 6 and 10 | End of year 12 assessment – usually a full 90-minute AS Breadth in Physics paper.Core HW pieces set from chapters 6 and 9. | Core HW pieces set from chapters 14 and 16. |
| **EMPOWERING** | **Key vocabulary** |   Too much to list in its entirety. Key vocabulary is shown in bold throughout each chapter with definitions given in the glossary at the back of the textbook.   |
| **CHALLENGING** | **Super curricular recommendations** | [Sandringham Super Curriculum - Physics KS5 (google.com)](https://sites.google.com/mysandstorm.org/sandringham-super-curriculum/home/ks5/physics-ks5) A collection of resources designed to stretch and challenge the students and take them beyond the curriculum.  |

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|   | **Autumn** | **Spring** | **Summer** |
| HT1 | HT2 | HT3 | HT4 | HT5 | HT6 |
| **Year 13** | **BROAD** | **Core content, knowledge and skills** | Chapter 15 – Ideal gasesChapter 17 - Oscillations | Chapter 19 – StarsChapter 20 – CosmologyChapter 18 – Gravitational fields | Chapter 22 – Electric FieldsChapter 21 - CapacitanceChapter 24 – Particle PhysicsChapter 25 - Radioactivity | Chapter 23 – Magnetic FieldsChapter 27 – Medical imagingChapter 26 – Nuclear Physics | In-class revision in preparation for the final exams. | In-class revision in preparation for the final exams. |
| **COHERENT** | **Prior knowledge required to access this unit**(All of the prior GCSE knowledge to access the course is referenced from the AQA Combined or Triple Science GCSE courses) | **Year 12 knowledge**Chapter 2 – Foundations of PhysicsChapter 3 – MotionChapter 4 – Forces in ActionChapter 5 – Work, Energy and PowerChapter 6 - MaterialsChapter 7 – Laws of motion and momentumChapter 11 – Waves 1 | **GCSE Knowledge**Chapter 16 – Space**Year 12 knowledge**Chapter 3 – MotionChapter 4 – Forces in actionChapter 5 – Work, energy and powerChapter 13 – Quantum Physics**Year 13 knowledge**Chapter 15 – Ideal gases | **GCSE knowledge**Chapter 4 – Electrical circuitsChapter 7 - Radioactivity**Year 12 knowledge**Chapter 3 – Forces in actionChapter 8 – Charge and currentChapter 9 – Energy, power and resistanceChapter 10 – Electrical circuitsChapter 13 – Quantum physics | **GCSE knowledge**Chapter 7 – RadioactivityChapter 15 - Electromagnetism**Year 12 knowledge**Chapter 3 – MotionChapter 4 – Forces in actionChapter 5 – Work, energy and powerChapter 11 – Waves 1Chapter 12 – Waves 2**Year 13 knowledge**Chapter 18 – Gravitational fieldsChapter 22 – Electric FieldsChapter 24 – Particle PhysicsChapter 25 - Radioactivity | **Year 12 knowledge**Chapters 1-13**Year 13 knowledge**Chapters 14-27 | **Year 12 knowledge**Chapters 1-13**Year 13 knowledge**Chapters 14-27 |
| **Assessment** | Year 13 TES 1 – a full year 12 AS Depth in Physics paper to allow for students to revisit all of the year 12 material. |   | Year 13 TES 2 – a full year 13 Modelling Physics paper as all of the required chapters examined in this paper will have been taught by this time plus it requires students to revisit the year 12 material from Chapters 2 to 7 inclusive. |   | H556/01 – Modelling PhysicsH556/02 – Exploring physicsH556/03 – Unified physics |  H556/01 – Modelling PhysicsH556/02 – Exploring physicsH556/03 – Unified physics |
| **EMPOWERING** | **Key vocabulary** | Too much to list in its entirety. Key vocabulary is shown in bold throughout each chapter with definitions given in the glossary at the back of the textbook. |
| **CHALLENGING** | **Super curricular recommendations** | [Sandringham Super Curriculum - Physics KS5 (google.com)](https://sites.google.com/mysandstorm.org/sandringham-super-curriculum/home/ks5/physics-ks5) A collection of resources designed to stretch and challenge the students and take them beyond the curriculum. |