**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 Physics  Chapter 5 – Work, Energy and Power  Chapter 11 – Waves 1  Chapter 12 – Waves 2 | Chapter 3 – Motion  Chapter 13 – Quantum Physics | Chapter 4 – Forces in Action  Chapter 7 – Laws of motion and momentum  Chapter 8 – Charge and Current | Chapter 6 – Materials  Chapter 10 – Electrical circuits | Chapter 6 (cont.) – Materials  Chapter 9 – Energy, Power and Resistance  Revision 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 energy  P8.1 – Vectors and scalars  P12 – Wave properties  P13 – Electromagnetic waves  P14 - Light | P4 – Electric circuits  P9 - Motion | P8 – Forces in balance  P10 – Forces and motion | P10.8 – Forces and elasticity  P4 – Electric circuits  P5 – Electricity in the home | P10.8 – Forces and elasticity  P3 – Energy resources  P4 – Electric circuits  P5 – Electricity in the home | **Year 12 knowledge**  Chapter 2 - Foundations of physics  Chapter 4 – Forces in Action  Chapter 7 – Laws of motion and momentum  **GCSE knowledge**  P2 – Energy transfer by heating  P6 – Molecules and matter  P8 – Forces in balance  P10 – 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 gases  Chapter 17 - Oscillations | Chapter 19 – Stars  Chapter 20 – Cosmology  Chapter 18 – Gravitational fields | Chapter 22 – Electric Fields  Chapter 21 - Capacitance  Chapter 24 – Particle Physics  Chapter 25 - Radioactivity | Chapter 23 – Magnetic Fields  Chapter 27 – Medical imaging  Chapter 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 Physics  Chapter 3 – Motion  Chapter 4 – Forces in Action  Chapter 5 – Work, Energy and Power  Chapter 6 - Materials  Chapter 7 – Laws of motion and momentum  Chapter 11 – Waves 1 | **GCSE Knowledge**  Chapter 16 – Space  **Year 12 knowledge**  Chapter 3 – Motion  Chapter 4 – Forces in action  Chapter 5 – Work, energy and power  Chapter 13 – Quantum Physics  **Year 13 knowledge**  Chapter 15 – Ideal gases | **GCSE knowledge**  Chapter 4 – Electrical circuits  Chapter 7 - Radioactivity  **Year 12 knowledge**  Chapter 3 – Forces in action  Chapter 8 – Charge and current  Chapter 9 – Energy, power and resistance  Chapter 10 – Electrical circuits  Chapter 13 – Quantum physics | **GCSE knowledge**  Chapter 7 – Radioactivity  Chapter 15 - Electromagnetism  **Year 12 knowledge**  Chapter 3 – Motion  Chapter 4 – Forces in action  Chapter 5 – Work, energy and power  Chapter 11 – Waves 1  Chapter 12 – Waves 2  **Year 13 knowledge**  Chapter 18 – Gravitational fields  Chapter 22 – Electric Fields  Chapter 24 – Particle Physics  Chapter 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 Physics  H556/02 – Exploring physics  H556/03 – Unified physics | H556/01 – Modelling Physics  H556/02 – Exploring physics  H556/03 – 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. | | | | | |