

**Share Multi Academy Trust**

**Curriculum Planning Template**

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| Subject: | Physics | Year:12 | Teacher 1 | Ability: All |  |

**Link to specification:** [AS and A-level Physics Specification Specifications for first teaching in 2015 (aqa.org.uk)](https://filestore.aqa.org.uk/resources/chemistry/specifications/AQA-7404-7405-SP-2015.PDF)

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| Term / Date(s) | Half Term 1 (Sep – End of sept) | Half-term 1/2 (End of Sept to Xmas) | Half-term 3-5 (Jan to May) | Half-term 6 (May to July) |
| Topic | **Teacher 1:** **Measurement and their errors.** **Electricity Mechanics** | | | |
| Topic overview  Pupils will learn… | A working knowledge of the specified fundamental (base) units of measurement is vital. Likewise, practical work in the subject needs to be underpinned by an awareness of the nature of measurement errors and of their numerical treatment. The ability to carry through reasonable estimations is a skill that is required throughout the course and beyond. | This section builds on and develops earlier study of these phenomena from GCSE. It provides opportunities for the development of practical skills at an early stage in the course and lays the groundwork for later study of the many electrical applications that are important to society. | Vectors and their treatment are introduced followed by development of the student’s knowledge and understanding of forces, energy and momentum. New topics which extend from GCSE are brought in here including resolving forces, SUVAT and projectile motion. | Students will complete synoptic assessment (EoY assessment) that will underpin our KS5 RETEACH strategy. These assessments will highlight key gaps in student’s knowledge and skills which can then be filled using skilful RETEACH prior to Year 2. |

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| Subject: | Physics | Year:12 | Teacher 2 | Ability: All |  |

**Link to specification:** [**https://www.aqa.org.uk/req\_path=resources/physics/specifications/AQA-7407-7408-SP-2015.PDF**](https://www.aqa.org.uk/req_path=resources/physics/specifications/AQA-7407-7408-SP-2015.PDF)

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| Term /dates | **Half-term 1 (sept- Oct)** | **Half-term 2 (Oct – Dec)** | **Half-term 3 -6 (Jan July)** | | | |
| Topic | **Teacher 2:** Particles and radiation | Waves | Mechanics and materials | | | |
| Topic overview  Pupils will learn… | This section introduces students both to the fundamental properties of matter, and to electromagnetic radiation and quantum phenomena. Teachers may wish to begin with this topic to provide a new interest and knowledge dimension beyond GCSE. Through a study of these topics, students become aware of the way ideas develop and evolve in physics. They will appreciate the importance of international collaboration in the development of new experiments and theories in this area of fundamental research. | GCSE studies of wave phenomena are extended through a development of knowledge of the characteristics, properties, and applications of travelling waves and stationary waves. Topics treated include refraction, diffraction, superposition and interference. | | Vectors and their treatment are introduced followed by development of the student’s knowledge and understanding of forces, energy and momentum. The section continues with a study of materials considered in terms of their bulk properties and tensile strength. As with earlier topics, this section and also the following section Electricity would provide a good starting point for students who prefer to begin by consolidating work. | Students will now draw together their knowledge and skills learned for far and apple this understanding of functional groups and their reactions to a synoptic KAT 4. Gaps in knowledge and skills will be retaught before their end of year assessment in HT6. | Students will complete synoptic assessment (EoY assessment) that will underpin our KS5 RETEACH strategy. These assessments will highlight key gaps in student’s knowledge and skills which can then be filled using skilful RETEACH prior to Year 2. |

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| Subject: | Physics | Year:13 | Teacher 1 | Ability: All |  |

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| Term / Date(s) | Half Term 1 (Sep – Oct Half Term) | Half-term 2 (Oct Half Term to Xmas) | Half-term 3 (Xmas to Feb) | Half-term 4 (Feb to Easter) | Half-term 5 (Easter to May) | Half-term 6 (May to July) |
| Topic | **Teacher 1: Fields and their consequences. Medical Physics** | | | | | |
| Topic overview | Students will have been aware of the effects of gravity since they first fell down, so it is probably the force they feel most familiar with. In this topic, they will extend their terrestrial experience to develop a much broader picture of the force of gravity, and its representation in the form of a gravitational field. The concept of field is one of the great unifying ideas in physics. The ideas of gravitation, electrostatics and magnetic field theory are developed within the topic to emphasise this unification. | | | Students with an interest in biological and medical topics are offered the opportunity to study some of the applications of physical principles and techniques in medicine. The physics of the eye and ear as sensory organs is discussed. The important and developing field of medical imaging, with both non- ionising and ionising radiations is considered. | Action plans based on synoptic assessments to identify gaps in knowledge prior to summative assessments. | A-level summative assessments. |

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| Subject: | Physics | Year:13 | Teacher 2 | Ability: All |  |

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| Term / Date(s) | Half Term 1 (Sep – Oct Half Term) | Half-term 2 (Oct Half Term to Xmas) | Half-term 3 (Xmas to Feb) | Half-term 4 (Feb to Easter) | Half-term 5 (Easter to May) | Half-term 6 (May to July) |
| Topic | Teacher 2: Further Mechanics | Thermal Physics | Nuclear Physics | Medical Physics |  | |
| Topic overview  Pupils will learn… | Circular motion including angular velocity and acceleration. The principles behind circular motion including practical applications. They will learn about centripetal acceleration and alleviate the misunderstanding around centrifugal force. | Understanding thermodynamics including specific heat capacity and latent heat and how energy is transferred between stores. Students will to use complex calculations including ideal gas equation and the three pressure laws. | This section builds on the work of Particles and radiation to link the properties of the nucleus to the production of nuclear power through the characteristics of the nucleus, the properties of unstable nuclei, and the link between energy and mass. | Students with an interest in biological and medical topics are offered the opportunity to study some of the applications of physical principles and techniques in medicine. The physics of the eye and ear as sensory organs is discussed. The important and developing field of medical imaging, with both non- ionising and ionising radiations is considered. | Action plans based on synoptic assessments to identify gaps in knowledge prior to summative assessments. | A-level summative assessments. |