

Science KS4 Curriculum Intent, Implementation and Impact Overview

| Year: 11 Subject: Separate Physics IMPLEMENTATION | | | | | | |
|---|--|---|--|---|--|-----------------|
| | Half Term 1 (7) | Half Term 2 (7) | Half Term 3 (7) | Half Term 4 (6) | Half Term 5 (5) | Half Term 6 (6) |
| INTENT (AQA GCSE Physics (9-1) GCSE specification coverage key concepts and skills ('Big ideas') | Context: Review of paper 1 concepts P1 – P6 P7 Radioactivity Key Vocabulary: Proton, neutron, electron, gamma, beta, alpha, penetration, emission, decay, half-life, radiation. Prior Learning / LTM: Y7/Y8 Matter. Cultural Capital: The increase in UK nuclear energy use and Chernobyl. | Context: P13 Electromagnetic spectrum P14 Light Key Vocabulary: Radio, micro, infrared, energy, Amplitude, wavelength, frequency, speed, displacement, Hertz, phase, Reflection, refraction. Prior Learning / LTM: Y7/Y8 Waves Cultural Capital: How the use of X-rays advanced medicine. | Context: P15 Electromagnetism Key Vocabulary: Wire, induction, field, strength, direction, flux, density, solenoid, current, electron, copper, core, motor, generator. Prior Learning / LTM: Y7/Y8 Electromagnets Cultural Capital: Evaluating the impact of electrical vehicles. | Context: P16 Space Key Vocabulary: Protostar, nebulae, CMBR, black hole, Supernova, satellites, cosmic Prior Learning / LTM: Y7 Universe Cultural Capital: Space exploration and its legacy. | Context: Review of paper 1/2 topics, required practical review. Key Vocabulary: N/A Prior Learning / LTM: Y7/8 electromagnets, Y7/8 Forces, Y7/8 Waves, Y7/8 universe, Y9/Y10/Y11 units P1-16 Cultural Capital: N/A | N/A |
| All material in the Universe is made of very small particles | X | X | x | x | X | |
| Objects can affect other objects at a distance | X | X | x | x | X | |
| Changing the movement of an object requires a net force to be acting on it | | | | X | X | |
| The total amount of energy in the Universe is always the same | X | X | x | X | X | |
| The composition of the Earth and its atmosphere | | X | | X | X | |
| Our solar system is a very small part of one of millions of galaxies in the Universe | | | | X | X | |
| Organisms are organised on a cellular basis | | | | | | |
| Organisms require a supply of energy and materials | | | | | | |
| Genetic information is passed down from one generation of organisms to another | | | | | | |

| | | | | | | |
|--|--|---|---|---|---|--|
| The diversity of organisms, living and extinct, is the result of evolution | | | | | | |
| Apply knowledge and understanding to explain observations. | X | X | X | X | X | |
| Use different types of scientific enquiry to answer scientific questions. | x | X | X | X | X | |
| Use technical terminology with confidence accurately and precisely. | x | x | X | X | X | |
| Apply mathematical knowledge to scientific understanding. | x | x | X | X | X | |
| Awareness of some of the social and economic implications of science | x | x | x | x | x | |
| IMPACT | <p>Assessment: Trial exam 1 - Paper 1 Data analysis - Half-life Maths skills 1</p> <p>Progression to KS5: Module 4 Quantum physics, Module 6 particles and medical physics. Scientific enquiry.</p> | <p>Assessment: Trial exam 2 Extended writing refraction practical recall Maths skills 2</p> <p>Progression to KS5: Module 4 Waves, waves 2 and quantum physics Module 5 Oscillations Scientific enquiry.</p> | <p>Assessment: Trial exam 3 Extended writing electromagnets Maths skills 4</p> <p>Progression to KS5: Module 6 Electrical and magnetic fields.</p> | <p>Assessment: Trial exam 4 Extended writing -Star creation Maths skills 4</p> <p>Progression to KS5: Module 5 Gravitational fields, Stars and cosmology</p> | <p>Assessment: External GCSE examinations May/June (AQA)</p> <p>Paper 1</p> <p>Paper 2</p> | |

Cultural Capital is the body of knowledge a student needs so that they can flourish in the future and not be left behind. LTM = Long Term Memory.