Science KS4 Curriculum Intent, Implementation and Impact Overview

	Year: 10 Subject: Separate Physics IMPLEMENTATION					
INTENT (**AQA GCSE Separate Physics (9-1) GCSE specification coverage** key concepts and skills ('Big ideas')	**Half Term 1 (7)** **Context:** P1 Conservation and dissipation of energy **Key Vocabulary:** **Energy, transfer, store, pathway, Kinetic, gravitational, Waste, efficiency.** **Prior Learning / LTM:** Y7/Y8 Energy embedded within all units. **Cultural Capital:** The pursuit of infinite energy. Perpetual motion competition.	**Half Term 2 (7)** **Context:** P2 Energy transfer by heating P3 Energy resources **Key Vocabulary:** **Energy, transfer, store, pathway, Kinetic, gravitational, Waste, efficiency, hydroelectric, biomass, tidal, geothermal.** **Prior Learning / LTM:** Y7/Y8 Energy embedded within all units, Y7/Y8 Earth unit. **Cultural Capital:** Renewable energy suitability vs location.	**Half Term 3 (7)** **Context:** P4 Electric circuits P5 Electricity in the home **Key Vocabulary:** **Circuit, charge, potential, volt, amp, circuit, component, resistance, series, parallel.** **Prior Learning / LTM:** **Y7 Electromagnets.** **Cultural Capital:** Energy demands and the UK renewable energy scheme.	**Half Term 4 (6)** **Context:** P5 Electricity in the home P6 Fundamentals of physics **Key Vocabulary:** Mass, weight, density, kinetic, conservation, physical, melting, boiling, state, vaporisation, fusion, pressure **Prior Learning / LTM:** **Y7 Matter.** **Cultural Capital:** Energy demands and the UK renewable energy scheme.	**Half Term 5 (5)** **Context:** P7 Radioactivity **Key Vocabulary:** **Proton, neutron, electron, gamma, beta, alpha, penetration, emission, decay, half-life, radiation.** **Prior Learning / LTM:** **Y7 Matter.** **Cultural Capital:** The increase in UK nuclear energy use and Chernobyl.	**Half Term 6 (6)** **Context:** P8 Forces in balance **Key Vocabulary:** **Force, Newton, vector, scalar, resultant, equilibrium, lever, moment, multiplier, centre, parallelogram, resolution.** **Prior Learning / LTM:** **Y7/Y8 Forces, Y9 unit 1 and 2.** **Cultural Capital:** World land speed record and the UK's contribution.
All material in the Universe is made of very small particles	x	x	X	x	X	x
Objects can affect other objects at a distance	x				X	X
Changing the movement of an object requires a net force to be acting on it						x
The total amount of energy in the Universe is always the same	x	x	X	x	X	X
The composition of the Earth and its atmosphere		x		x		
Our solar system is a very small part of one of millions of galaxies in the Universe						
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	X
Use different types of scientific enquiry to answer scientific questions.	x	x	X	X	X	x
Use technical terminology with confidence accurately and precisely.	x	x	X	X	X	x
Apply mathematical knowledge to scientific understanding.	x	x	X	X	X	x
Awareness of some of the social and economic implications of science	x	x	x	x	x	x
IMPACT	Assessment: Paper 1 assessment. Data analysis national grid Maths skills 1 Progression to KS5: Module 3 Work, energy and power and Materials. Scientific enquiry.	Assessment: Efficiency calculations Required practical SHC Maths skills 2 Progression to KS5: Module 3 Work, energy and power Scientific enquiry.	Assessment: Paper 1 assessment. Required practical component characteristics Maths skills 3 Progression to KS5: Module 4 Charge and current, Energy, power and resistance and Electrical circuits. Scientific enquiry.	Assessment: Extended writing Nature of waves. Maths skills 4 Progression to KS5: Module 3 forces in action, materials Module 5 Thermal physics and Ideal gases. Scientific enquiry.	Assessment: Required practical IR and absorption. Data analysis – Half-life Maths skills 5 Progression to KS5: Module 4 Quantum physics, Module 6 particles and medical physics. Scientific enquiry.	Assessment: Trial exam – Paper 1 Data analysis – stopping distance. Maths skills 6 Progression to KS5: Module 3 Forces and motion. Scientific enquiry.

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.