Year 12 physics curriculum map

Notes:

1 This curriculum map is subject to review and adjustment as the course progresses

2 Chapter 1 Development of practical skills will be taught throughout the course when practical work is carried out

Term	Autumn	Spring	Summer
Lessons	**Teacher A** Chapter 2.1 Physical quantities, units and measurements Students gain knowledge and understanding of physical quantities and units Chapter 2.2 Nature of quantities Students gain knowledge and understanding of scalars and vectors quantities. Students learn important conventions and ideas that permeate the fabric of physics. Chapter 4.1 Electricity: charge and current Students develop their understanding of the ideas of charge and current including the continuity equation ($I = AneV$) Chapter 4.2 Electricity: energy ,power and resistance Students develop understanding of electrical symbols, electromotive force, potential difference, resistivity and power **Teacher B** Chapter 3.1 Motion Students learn to describe and analyse the motion of objects in both one-dimension and in two-dimensions Chapter 3.2 Forces in action Students learn about the motion of an object when it experiences several forces and also the equilibrium of an object. Chapter 3.3 Work, energy and power The important link between work done and energy is explored. Students apply the important principle of conservation of energy to a range of situations	**Teacher A** Chapter 4.3 Electricity: electrical circuits Students learn about electrical circuits, internal resistance and potential dividers. LDRs and thermistors are used to show how changes in light intensity and temperature respectively can be monitored using potential dividers. Chapter 4.4 Waves Students gain knowledge and understanding of wave properties, electromagnetic waves, superposition and stationary waves. **Teacher B** Chapter 3.4 Materials Students examine the physical properties of springs and materials. Chapter 3.5 Newton's Laws of Motion Students develop understanding of Newton's laws – fundamental laws that can be used to predict the motion of all colliding or interacting objects in applications such as sport Chapter 4.5 Quantum physics This section provides knowledge and understanding of photons, the photoelectric effect, de Broglie waves and wave–particle duality.	**Teacher A** Continue Chapter 4.4 Waves Students gain knowledge and understanding of wave properties, electromagnetic waves, superposition and stationary waves. PAG 12 Materials Presentation **Teacher B** Chapter 5.2 Circular motion This section provides knowledge and understanding of circular motion and important concepts such as centripetal force and acceleration Chapter 5.3 Oscillations This section provides knowledge and understanding of simple harmonic motion, forced oscillations and resonance. Chapter 6.2 Electric fields Students develop knowledge and understanding of Coulomb's law, uniform electric fields, electric potential and energy.

Assessment	Mid-unit MCQ, End of unit MCQ, Cumulative Assessment	Mid-unit MCQ, End of unit MCQ, Cumulative Assessment	Mid-unit MCQ, End of unit MCQ, Cumulative Assessment
Practical endorsement tasks (PAGs)	1.1 Measuring 'g' 2.2 Young Modulus 3.1 Resistivity	4.1 Resistors 5.1 Diffraction grating 5.3 Oscilloscope	6.1 Planck Constant 10.3 Oscillations 12.1 Materials presentation

Year 13 physics curriculum map

Term	Autumn	Spring	Summer
Lessons	**Teacher A** Chapter 6.1 Capacitors Students learn the basic properties of capacitors and how they are used in electrical circuits. The use of capacitors as a source of electrical energy is then developed. This section introduces the mathematics of exponential decay. Chapter 5.1 Thermal physics Students gain knowledge and understanding of temperature, matter, specific heat capacity and specific latent heat with contexts involving heat transfer and change of phase **Teacher B** Chapter 5.5 Astrophysics and cosmology This section provides knowledge and understanding of stars, Wien's displacement law, Stefan's law, Hubble's law and the Big Bang. Chapter 6.4 Nuclear and particle physics Students develop knowledge and understanding of the atom, nucleus, fundamental particles, radioactivity, fission and fusion.	**Teacher A** Chapter 5.4 Gravitational fields This section provides knowledge and understanding of Newton's law of gravitation, planetary motion and gravitational potential and energy. Chapter 6.5 Medical imaging Students gain knowledge and understanding of X-rays, CAT scans, PET scans and ultrasound scans. **Teacher B** Chapter 6.4 Nuclear and particle physics Students develop knowledge and understanding of the atom, nucleus, fundamental particles, radioactivity, fission and fusion. Chapter 6.3 Electromagnetism Students develop knowledge and understanding of magnetic fields, motion of charged particles in magnetic fields, Lenz's law and Faraday's law.	**Teacher A** Revision and preparation for the A level exams. **Teacher B** Revision and preparation for the A level exams.
Assessment	Mid-unit MCQ, End of unit MCQ, Mock exam	Mid-unit MCQ, End of unit MCQ, Mock exam	
Practical endorsement tasks (PAGs)	8.1 Absolute zero 9.1 charging capacitors	7.1 random nature 11.1 transformers	