PHYSICS

YEAR 12

AUTUMN 1

3.1 Measurements & Errors: SI Units, Estimating, Uncertainties, Reference, Drawing graphs.	3.2 Particles: Nuclear Model, Unstable Atoms, Neutrino, Photons, Anti Particles.	3.4 Adding and Subtracting Vectors & Turning Forces & Moments.	Prior Learning Atomic Structure, Electron Shells, Energy Levels, Newton's Laws, Force diagrams.

AUTUMN 2

3.2 Particles: Classification, Particle Interactions, Feynman diagrams.	3.4 SUVAT Equations, Graphs of Motion, Newton's Laws of Motion, Acceleration due to gravity (CPAC).	3.3 Waves: Properties, Phase difference, Longitudinal & Transverse.	Prior Learning Force Diagrams, Laws of Motion, Basic SUVAT, Waves and Energy Transfer, Wave forms.

SPRING 1

3.4 Projectile Motion, Drag / Lift & Terminal Velocity, Momentum & Impulse.	3.3 Waves: Polarisation, Stationary Waves, Harmonics, Single & double Slit, Diffraction Gratings.	Prior Learning Waves and Energy Transfer, Wave forms, Basic momentum calculations for collisions, Balanced and Unbalanced forces.

SPRING 2

3.4 Work Done & Power, Conservation of Energy, 3.2 The Photoelectric Effect, Energy Levels & Photon Emission, Wave Particle Duality.	3.5 Electricity: Current, Charge, resistance, Power, Ohms Law, Resistivity, Superconductivity, Series and Parallel, Kirchhoff.	Prior Learning Static Electricity, Circuit rules for Series and Parallel, Calculating energy Transfers, Law of Energy Conservation, Energy Levels

SUMMER 1

3.4 Density, Hooke's Law, Stress and Strain, Properties of Materials and Young Modulus (CPAC).	3.5 Electricity: Energy & Power equations, Resistors in Series & Parallel, Potential Dividers, EMF, Internal	Prior Learning Component Characteristics, Basic Hooke's Law calculations, Measuring the extension of objects and interpreting graphs.

SUMMER 2

Revision & Exams	3.7 Gravitational Fields: Laws of gravitation, Gravitational Field Strength, Gravitational Potential energy, Satellite energy, Satellite motion.	Prior Learning Syllabus from Y12 Physics.

CAREERS LINKS

Engineer, pilot, architect, electrician, computer science, information technology, law, accountancy.

CHARACTER LINKS

Scientific Investigations to develop attention to detail, accuracy of measurement, analysis of risk and errors. Evaluation of performance and identifying improvements (performance virtues). Developing teamwork, resilience, confidence and critical thinking (intellectual virtues).

KEY ASSESSMENT DATES

Pupils complete assessments in line with the KS5 assessment calendar. There are also extra end of topic assessments and end of year 12 assessments.

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