A Level Physics

Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less.

Autumn	Spring			Summer

Year 12

Mechanics	Electricity	Waves	Quantum Phenomena	Circular motion and Thermal Physics
•Motion •Materials •Forces •Newton's Laws •Momentum •Energy	•Current and Resistance •DC circuits •Energy and Power •Potential dividers •Sensing circuits •Internal resistance	•Progressive waves •Reflection, Refraction and Diffraction •Intensity and Polarisation •Superposition •The Young double slit experiment •Stationary waves •Harmonics	•The photon •The Planck constant •The photoelectric effect •Wave particle duality •de-Broglie wavelength	•Angular velocity •Centripetal force and acceleration •Applications of circular motion •Heat and temperature •Specific heat capacity •Internal energy •Ideal gases

Autumn				Spring		

Year 13

Simple Harmonic motion	Gravitational fields	Stars and Cosmology	Capacitors	Nuclear and Particle Physics	Medical Physics	Electric fields, magnetic fields and electromagnetism
•Acceleration and displacement •Analysing motion •Damping and resonance	•Gravitational field strength •Newton's laws of gravitation •Kepler's laws •Satellites •Gravitational potential energy	•Astronomical distances •Life cycle of a star •Analysing starlight •Black body radiation •Stefan's law •Hubble's law •The Big Bang Theory •Dark matter and Dark Energy	•Introduction to capacitors •Capacitance •Capacitors in a circuit •Discharging a capacitor •Charging a capacitor	•Rutherford's scattering experiment •The strong nuclear force •Particles and anti-particles •Hadrons and Leptons •Quarks •Ionizing radiation •Radioactivity •Annihilation •Fission and Fusion	•X-rays •CAT scans •The Gamma camera •PET scans •Ultrasound •Doppler imaging	•Electric fields •Coulomb's law •Particles in an electric field •Electric potential energy •Magnetic fields •Particles in a magnetic field •Electromagnetic induction •Applications of the generator effect