Physics KS5: Year 12



3.6.2 Thermal physics (a)

Specific heat capacity and specific latent heat.
The experimental gas laws

SUMMER

3:2

3.6 Further mechanics

Circular motion.
Simple harmonic motion.

SUMMER

3:1

3.5 Electricity

Electricity basics, I-V characteristics, resistivity, circuits, the potential divider, EMF & internal resistance

SPRING 2:2

3.4.2 Materials

Properties of solids, the Young modulus

3.4.1 Mechanics

Scalars & vectors, moments, motion in a straight line, projectiles, Newton's laws of motion, momentum, work, energy & power

SPRING

2:1

3.3 Waves

Progressive waves, superposition, stationary waves, interference, diffraction, refraction & TIR

3.2.2 Quantum Phenomena

The Photoelectric effect, Collision of electrons wire atoms, spectra, waveparticle duality.

AUTUMN 1:2

3.2.1 Particles

Atomic structure, unstable nuclei, particles & anti-particles, photons, particle interactions, classification, quarks, conservation laws.

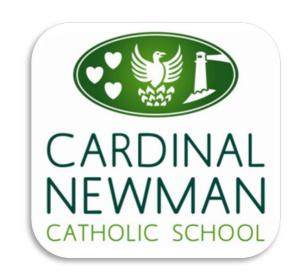
3.1 Measurements & Uncertainties

SI Units, prefixes, uncertainties, estimation

AUTUMN 1:1

OUR LEARNING JOURNEY

Physics KS5: Year 13



SUMMER 3:2

Revision & review

SUMMER 3:1

3.12 (Option) Turning points in Physics

The discovery of the electron. Wave-particle duality. Special relativity.

SPRING 2:2

(Mass & energy)

3.8.1 Nuclear Physics

E=mc², the atomic mass unit, fission & fusion, binding energy (per nucleon), BE per nucleon curve, induced fission, the nuclear reactor

3.8.1 Nuclear Physics (Radioactivity)

Rutherford scattering, radioactive radiation & decay, nuclear instability, nuclear radius.

3.6.2 Thermal Physics (kinetic theory)

Brownian motion. Kinetic theory derivation.

SPRING

2:1

Flux density, moving charges in B-fields, flux & flux linkage, EM induction, AC and transformers

3.7.5 Magnetic fields

3.7.4 Capacitance

Parallel plate capacitor, energy stored, charging & discharging.

AUTUMN 1:2

3.7.1 Fields (3.7.2 Gravitational)

Force fields, vector treatment, inverse-square law, similarities & differences.

Newton's law of gravitiation, field strength, potential, orbits of planets & satellites.

3.7.3 Fields (Electric)

Coulomb's law, field strength, potential, orbits of planets & satellites.

AUTUMN 1:1

OUR LEARNING JOURNEY