PHYSICS
SCIENCE DEPARTMENT

KS5: YEAR 13

OUR LEARNING JOURNEY

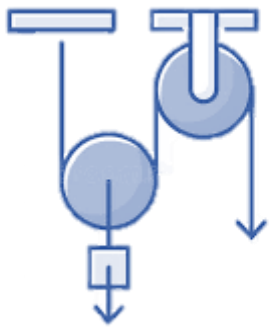
SUMMER 3:2

Examinations

Revision & revies
Examinations

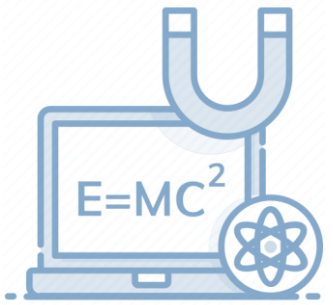
SUMMER 3:1

Revision & review



SPRING 2:2

3.12 Turning Points in Physics
3.12.3 Special relativity.



3.12 Turning Points in Physics
3.12.1 The discovery of the electron.
3.12.2 Wave-particle duality

SPRING 2:1

3.8 Radioactivity & nuclear
Rutherford scattering, nuclear radiation, radioactive decay & nuclear stability, nuclear radius, mass & energy, induced fission, the nuclear reactor.

AUTUMN 1:2

3.7.5 Fields and their consequences
Magnetic fields: Forces on current-carrying conductors and charges, Electromagnetic induction, alternating current and transformers

AUTUMN 1:1

3.7 Fields and their consequences
3.7.1 Fields: Concept of a field, representation of fields, comparison of fields.
3.7.2 Gravitational fields: Radial & uniform fields, Newton's law of gravitation, gravitational field strength, orbits, gravitational potential.
3.7.3 Electric fields: Radial & uniform fields, forces between charges, electric field strength, electric potential.
3.7.4 Capacitance: The parallel plate capacitor, energy stored, charging and discharging.

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PHYSICS
SCIENCE DEPARTMENT

KS5: YEAR 12

OUR LEARNING JOURNEY

AUTUMN 1:1

Transition from GCSE
3.1 Measurements & Uncertainties
SI Units, prefixes, uncertainties, estimation
3.2.1 Particles
Atomic structure, unstable nuclei, particles & anti-particles, photons, particle interactions, classification, quarks, conservation laws.

AUTUMN 1:2

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

3.2.2 Quantum Phenomena
The Photoelectric effect, Collision of electrons with atoms, spectra, wave-particle duality.

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

SPRING 2:2

3.4.2 Materials
Properties of solids, the Young modulus

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

SUMMER 3:1

3.6.1 Further mechanics
Circular motion.
Simple harmonic motion

SUMMER 3:2

3.6.2 Thermal physics
Internal energy, Specific heat capacity and specific latent heat.
The experimental gas laws.
Ideal gases & Kinetic theory model.

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