

# A Level Physics KS5: Year 12



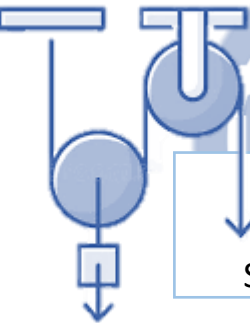
CARDINAL  
NEWMAN  
CATHOLIC SCHOOL



**3.6.2 Thermal physics (a)**  
Specific heat capacity and specific latent heat.  
The experimental gas laws



Term  
3:2

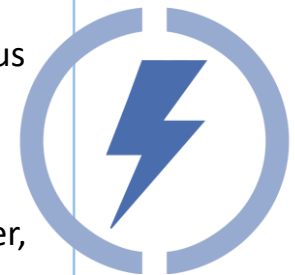


**3.6 Further mechanics**  
Circular motion.  
Simple harmonic motion.

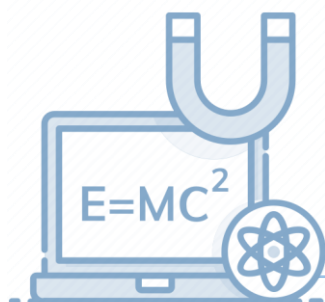
Term  
3:1

**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



Term  
2:2

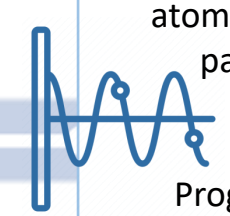


**3.4.1 Mechanics**  
Scalars & vectors, moments, motion in a straight line, projectiles, Newton's laws of motion, momentum, work, energy & power

Term  
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



Term  
1.2



**Transition from GCSE**

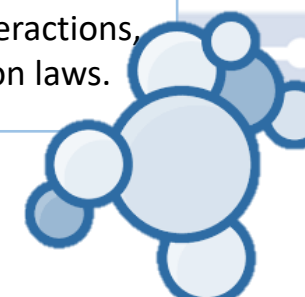
**3.1 Measurements & Uncertainties**  
SI Units, prefixes, uncertainties, estimation

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



Term  
1.1

OUR LEARNING  
JOURNEY



# A Level Physics KS5: Year 13



Examinations

Term  
3:2

Revision and Review



Term  
3:1

**3.12 (Option) Turning points in Physics**

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



**3.8.1 Nuclear Physics (Mass & energy)**

$E=mc^2$ , the atomic mass unit, fission & fusion,  
binding energy (per nucleon), BE per nucleon curve,  
induced fission, the nuclear reactor

Term  
2:2

**3.6.2 Thermal Physics (kinetic theory)**

Brownian motion.  
Kinetic theory derivation.

**3.8.1 Nuclear Physics (Radioactivity)**

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



Term  
2:1

**3.7.4 Capacitance**

Parallel plate capacitor,  
energy stored, charging &  
discharging.

**3.7.5 Magnetic fields**

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

Term  
1.2



**3.7.1 Fields (3.7.2 Gravitational)**

Force fields, vector treatment, inverse-square  
law, similarities & differences.  
Newton's law of gravitation, field strength,  
potential, orbits of planets & satellites.

**3.7.3 Fields (Electric)**

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

**START**

Term  
1.1

**OUR LEARNING  
JOURNEY**



# A Level Physics



Revision and Review

Examinations

Year 13  
Term 3

3.6.2 Thermal Physics (kinetic theory)

3.8.1 Nuclear Physics (Radioactivity)

3.12 (Option) Turning points in Physics

3.8.1 Nuclear Physics (Mass & energy)

Year 13  
Term 2

3.7.1 Fields (3.7.2 Gravitational)

3.7.3 Fields (Electric)

3.7.4 Capacitance

3.7.5 Magnetic fields

Year 13  
Term 1

3.6 Further mechanics

3.6.2 Thermal physics (a)

Year 12  
Term 3

3.4.1 Mechanics

3.4.2 Materials

3.5 Electricity

Year 12  
Term 2

Transition from GCSE

3.1 Measurements & Uncertainties

3.2.1 Particles

3.2.2 Quantum Phenomena

3.3 Waves

**START**

Year 12  
Term 1

**OUR LEARNING  
JOURNEY**

