

YEARS 7 – 13

POSSIBLE CAREERS

-  PHYSICIST
-  MECHANICAL ENGINEER
-  ELECTRICAL ENGINEER
-  ASTROPHYSICIST
-  MEDICAL PHYSICIST
-  AEROSPACE ENGINEER

-  EXPLORE
-  INVESTIGATE
-  EXPERIMENT
-  APPLY

Building scientific understanding through curiosity, practical investigation and problem solving.

Key:
Red Text =
Triple Science
content only

A LEVEL PHYSICS

WAVES & THERMODYNAMICS

- Superposition
- Standing waves
- Photoelectric effect
- Internal energy
- Gas laws

OSCILLATIONS & COSMOLOGY

- SHM & resonance
- Damping
- Gravitational fields
- Stellar evolution
- Cosmology

UNIFYING CONCEPTS & APPLICATIONS

- Synoptic problem solving
- Core practicals
- Mathematical modelling
- Examination technique
- University preparation

A LEVEL PHYSICS

MECHANICS

- Motion & vectors
- Newton's Laws
- Momentum
- Projectile motion
- Work & power

ELECTRICITY & FIELDS

- Resistivity
- Internal resistance
- Kirchhoff's Laws
- Capacitors
- Electric & magnetic fields

PARTICLES & MATERIALS

- Nuclear physics
- Particle physics
- Standard Model
- Fluids
- Elasticity
- Young Modulus



GCSE PHYSICS

FORCES

- Springs
- Stopping distances
- Newton's Laws
- Momentum
- Moments, gears, and levers
- Fluid pressure and upthrust

ELECTROMAGNETISM

- Magnetic fields
- Motor effect
- Transformers
- Generators
- Loudspeakers and microphones

SPACE

- Solar System
- Stars
- Red shift
- Big Bang
- Synoptic revision



GCSE PHYSICS

ELECTRICITY & ATOMIC PHYSICS

- IV characteristics
- Static charge
- Mains electricity
- Radiation
- Half-life
- Fission & fusion
- Uses/medical uses of atomic radiation

WAVES

- EM spectrum
- reflection & fraction
- wave speed
- sound
- lenses
- ultrasound & seismic waves

FORCES

- Scalars & vectors
- Motion graphs
- Moments
- Motion calculations
- Resultant forces

GCSE PHYSICS FOUNDATIONS

ENERGY & MATTER

- Energy transfers
- Work & power
- Density
- Changes of state
- Internal energy
- Specific heat capacity

ELECTRICITY

- Charge, current & voltage
- Resistance
- Static electricity
- Domestic electricity
- National Grid
- AC & DC



FORCES & MOTION

- Speed, distance & time
- Motion graphs
- Acceleration
- $F = ma$
- Hooke's Law
- Pressure & work done



FIELDS & SPACE

- Magnets & fields
- Electromagnets
- Earth's magnetic field
- Gravity
- Solar System
- Astronomy



LIGHT & SOUND

- Wave properties
- Reflection & refraction
- Lenses
- Colour & dispersion
- Sound waves
- Hearing

INTRODUCTION TO PHYSICS

FORCES

- Contact & non-contact forces
- Balanced & unbalanced
- Friction & drag
- Magnetism



ELECTRICITY

- Conductors & insulators
- Series & parallel circuits
- Current & potential difference
- Resistance



ENERGY

- Energy stores & transfers
- Renewable energy
- Power & efficiency
- Heating & insulation

