

OUR PHYSICS JOURNEY

EXPLORE. INVESTIGATE. UNDERSTAND. INNOVATE.

YEAR
9

ADVANCED PHYSICS & GCSE FOUNDATIONS



ENERGY

- Energy types
- Kinetic energy
- Elastic energy
- Thermal energy
- Electrical energy
- Nuclear energy
- Renewable & biofuels



PARTICLE MODEL OF MATTER

- Density
- Particle model
- States of matter
- Internal energy



SCIENTIFIC ENQUIRY

- Experimental design
- Variables
- Graphs & data
- Evaluation



Big ideas: Forces, Electromagnets, Energy and Waves

SKILLS DEVELOPED



Scientific Enquiry



Practical Investigation



Observation



Data Analysis



Problem Solving



Evaluation



Mathematical Modelling

YEAR
8

FORCES, WAVES & SPACE



ENERGY, HEATING & COOLING

- Energy transfers
- Conduction
- Convection
- Radiation
- Thermal energy



FORCES & PRESSURE

- Pressure in solids, liquids & gases
- Moments
- Drag & friction
- Forces in action



MAGNETS & ELECTROMAGNETS

- Magnetic fields
- Electromagnets
- Uses of electromagnets
- Magnetism in everyday life



WAVES

- Properties of waves
- Sound waves
- Electromagnetic waves
- Wave behaviour



THE UNIVERSE

- Solar system
- Asteroids, comets, meteors
- Galaxies
- Scale of the universe



SCIENTIFIC ENQUIRY

- Questions
- Variables
- Planning
- Data
- Evaluation

Big ideas: Forces, Electromagnets, Energy and Waves

KEY CONCEPTS



Forces



Energy



Waves



Electromagnets



Matter



Space



Motion

YEAR
7

DISCOVERING HOW THE PHYSICAL WORLD WORKS



SOUND & WAVES

- Sound waves
- Frequency
- Amplitude
- Loudness
- Pitch



LIGHT

- Reflection
- Refraction
- Mirrors
- Vision
- Colour



ELECTRICITY

- Circuits
- Current
- Resistance
- Series & parallel circuits
- Charging by friction



ENERGY COSTS & TRANSFERS

- Energy stores
- Energy transfers
- Fuels
- Energy efficiency



FORCES

- Balanced & unbalanced forces
- Speed
- Gravity
- Distance-time graphs



SCIENTIFIC ENQUIRY

- Questions
- Variables
- Planning
- Data
- Conclusions

Big ideas: Forces, Electromagnets, Energy and Waves

WHERE PHYSICS CAN TAKE YOU



Aerospace Engineer



Physicist



Astrophysicist



Electrical Engineer



Mechanical Engineer



Architect



Data Scientist



Renewable Energy Engineer



Research Scientist

...and many more!



EXPLORE
Be curious



INVESTIGATE
Ask questions



UNDERSTAND
Make connections



INNOVATE
Create solutions