



Physics



Electromagnetism – The motor effect, Fleming's left-hand rule, Electric motors

Magnets – Permanent and induced magnetism, magnetic forces and fields - poles of a magnet, magnetic fields.

Electromagnetic waves - types and properties of electromagnetic waves, RP measuring IR, uses and applications of electromagnetic waves.

Waves in air, fluids and solids - transverse and longitudinal waves, properties of waves, RP ripple tank and standing waves in a string.



FINAL GCSE EXAM

EXAM REVISION

MAGNETISM AND ELECTRO-MAGNETS

WAVES

YEAR 11

Forces and braking - stopping distance, reaction time, factors affecting braking distance, momentum, conservation of momentum.

The Particle Model - density of material, RP density of regular and irregular objects, changes of state.

Internal energy and energy transfers - temperature changes in a system, specific heat capacity, changes of heat and specific latent heat.

Particle model and pressure - particle motion in gases.

FORCES

Forces and their interactions - scalar and vector quantities, contact and non-contact forces, gravity, resultant forces.

Work - Work done and energy transfer. Forces and elasticity, RP Hooke's law.

Newton's laws of motion - Newton's first law, Newton's second law, $RP F=ma$, Newton's third law.

PARTICLE MODEL OF MATTER

Energy changes - energy stores and systems, energy transfers, energy changes in systems, RP specific heat capacity, power.



Energy transfers - power, energy transfers in everyday appliances, the National Grid.

Domestic uses and safety - direct and alternating potential difference, mains electricity.

Circuits - circuit diagrams and symbols, charge, current, resistance and potential difference, RP Factors effecting resistance of a wire, resistors RP I-V characteristics. Series and parallel circuits.

Describing motion - distance and displacement, speed, velocity, the distance-time relationship, acceleration.



YEAR 10

ENERGY

ELECTRICITY

Conservation and dissipation of energy - efficiency. National and global energy resources.

Wave properties - observed waves, water waves, transverse waves, reflection of water waves, frequency.

Energy and Waves - pressure waves, ultrasound. Colours of light.

Atoms and nuclear radiation - radioactive decay and nuclear radiation, nuclear equations, half-lives and the random nature of radioactive decay, radioactive contamination.

Atoms and isotopes - the structure of an atom, mass number, atomic number and isotopes, the development of the model of the atom.



KS4

Work and Heating and Cooling - Energy transfers Simple machines, heating and cooling, conduction, radiation, insulation.

WAVES 2

Electromagnetism - Forces between magnets, poles, lines of magnetic force, Earth's magnetic field, electromagnets.



Pressure - in fluids, atmospheric pressure, floating and sinking, pressure calculations.

Forces - Force diagrams, balanced forces, deformation and elasticity, Hooke's law, work done and energy transferred.

FORCES 2

ENERGY 2

Electricity - current in series and parallel, potential difference, resistance (of conductors and insulators)



Energy costs - Calculation of fuel uses in domestic context, energy from food, comparing power ratings, domestic fuel bills.



Sound waves - frequency, reflection and absorption, speed of sound, vibrations and the ear, loudspeakers.

YEAR 8



Light waves - transmission and reflection of light, ray diagrams, refraction, convex lenses and the eye, transfer of energy, colours.

Electrostatic charges - Forces due to static electricity, positive and negative charges from transfer of electrons and electric fields.

ENERGY 1

Forces - balanced and unbalanced / gravity (non contact force / forces and motion (Newton's laws)

Energy Changes - types of energy transfers, law of conservation.

WAVES 1



ELECTRO-MAGNETS 1

FORCES 1

INTRODUCTION TO SCIENCE

Health and Safety in the Science Lab

YEAR 7

KS3

Space Physics - Gravity and weight

Describing motion - distance / time

Working like a scientist - variables, COSHH symbols, equipment, handling data, investigation skills

