

YEAR 11

Energy, forces and the structure of matter – Additional content

Electricity, magnetism and waves – Additional content

REVISION AND COMMUNICATION

- GCSE Required practical 14 Specific heat capacity SHC
- Newton's laws
- Distance/time Speed/time graphs
- GCSE Required practical 17 density
- Series/parallel
- Electromagnetic spectrum
- AQA GCSE Trilogy examination
- Energy stores and transfers
- Efficiency
- Hooke's law
- Speed, Velocity, acceleration
- V-I graphs
- power
- Longitudinal, transverse

ELC 3.6 Examination

3.6.5 Electromagnetic waves

3.6.4 Different types of waves

3.6.3 Magnetism and electromagnetism

3.6.2 Domestic electricity

3.6.1 Electrical current

YEAR 10

- Uses and applications
- Longitudinal waves
- Transverse waves
- electromagnets
- National grid
- Energy transfer
- ELC: Practical assessment Which is the best electric kettle?
- GCSE Required practical's 15 resistance and 16 I-V characteristics
- ELC: Practical assessment Does the length of a wire affect resistance?
- Electromagnetic spectrum
- GCSE Required practical 21 radiation and absorption
- Wave equation
- GCSE Required practical 20 waves
- Magnetic field
- solenoids
- plugs
- power
- Current, voltage, resistance relationship
- V-I graphs

YEAR 9

3.5.1 Energy, energy transfers and energy resources

3.5.2 Forces and work

3.5.3 Speed and stopping distances

3.5.4 Atoms and nuclear radiation

- ELC: Practical assessment Which colour is the best emitter of heat radiation, black, white or silver?
- Energy stores
- Renewable and non-renewable fuels
- Contact/non-contact forces
- ELC: Practical assessment What happens to a car on a ramp when the slope is increased?
- ELC 3.5 Examination
- Alpha, beta, gamma radiation
- Dangers, Chernobyl
- GCSE Required practical 6 reaction times and 19 acceleration
- Energy transfers and efficiency
- Fossil fuels formation
- Newton's laws
- Scalar/vector quantities
- GCSE Required practical 18 Force and extension
- Thinking/breaking distances
- Reaction times
- Distance-time graphs

Wave properties and effects

Pressure

Contact forces

Magnetism and electromagnets

Work

Heating and cooling

YEAR 8

- KS3 assessment
- colours, diffraction absorption/transmission
- Liquid pressure
- Newton's 1<sup>st</sup> law
- magnetic fields
- KS3 assessment
- Levers/pulleys
- Thermal radiation
- conduction
- frequency, wavelength, speed
- wave model transverse, longitudinal
- up thrust
- calculation
- KS3 assessment
- friction
- compasses
- Electromagnets and uses
- calculation
- convection

Current, voltage and resistance

Speed

Gravity

Light

Sound

- Energy changes
- Energy costs
- Energy types
- KS3 assessment
- Resultant forces
- mass/weight
- KS3 assessment
- reflection
- Frequency/pitch
- Amplitude/loudness
- Circuit diagrams
- series and parallel circuits
- KS3 assessment
- Calculating speed
- gravity in the Solar system
- transparent translucent, opaque
- refraction

Energy transfer and costs

Laboratory rules

YEAR 7

Schemes of learning are designed to ensure students progress based on their security of understanding and readiness for the next stage. STRETCH and CHALLENGE is at the heart of our curriculum

Pupils should decide on the appropriate type of scientific enquiry to undertake to answer their own questions and develop a deeper understanding of factors to be taken into account when collecting, recording and processing data.

Pupils should evaluate their results and identify further questions arising from them.

Topic tests and termly assessments are designed to assess knowledge and maximise progression.

Pupils should develop their use of scientific vocabulary, including the use of scientific nomenclature and units and mathematical representations.

Pupils should understand that science is about working objectively, modifying explanations to take account of new evidence and ideas and subjecting results to peer review.

Physics is the branch of science that deals with the structure of matter and how the fundamental constituents of the universe interact.