

Separate Science (Physics)

Paper 1

Content overview

Topic 1 – Key concepts of physics

Topic 2 – Motion and forces

Topic 3 – Conservation of energy

Topic 4 – Waves

Topic 5 – Light and the electromagnetic spectrum

Topic 6 – Radioactivity

Topic 7 – Astronomy

Paper 2

Content overview

Topic 1 – Key concepts of physics

Topic 8 – Energy - Forces doing work

Topic 9 – Forces and their effects

Topic 10 – Electricity and circuits

Topic 11 – Static electricity

Topic 12 – Magnetism and the motor effect

Topic 13 – Electromagnetic induction

Topic 14 – Particle model

Topic 15 – Forces and matter

Practical work

The content includes mandatory core practicals, All students must carry out all 18 of the mandatory core practicals listed below.

Physics Core practicals:

1. Investigate the relationship between force, mass and acceleration by varying the masses added to trolleys
2. Investigate the suitability of equipment to measure the speed, frequency and wavelength of a wave in a solid and a fluid
3. Investigate refraction in rectangular glass blocks in terms of the interaction of electromagnetic waves with matter.
4. Construct electrical circuits to:
 - a) investigate the relationship between potential difference, current and resistance for a resistor and a filament lamp
 - b) test series and parallel circuits using resistors and filament lamps
5. Investigate the densities of solid and liquids
6. Investigate the properties of water by determining the specific heat capacity of water and obtaining a temperature-time graph for melting ice
7. Investigate the extension and work done when applying forces to a spring