

## Handout 2 – Core Practicals at AS

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*Topic 2: Mechanics*

**CP1:** Determine the acceleration of a freely falling object

*Topic 3: Electric circuits*

**CP2:** Determine the electrical resistivity of a material

**CP3:** Determine the e.m.f. and internal resistance of an electrical cell

*Topic 4: Materials*

**CP4:** Use a falling-ball method to determine the viscosity of a liquid

**CP5:** Determine the Young modulus of a material

*Topic 5: Waves & Nature of light*

**CP6:** Determine the speed of sound in air using a 2-beam oscilloscope, signal generator, speaker and microphone

**CP7:** Investigate the effects of length, tension and mass per unit length on the frequency of a vibrating string or wire

**CP8:** Determine the wavelength of light from a laser or other light source using a diffraction grating

## Core Practicals at A level

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In addition to the 8 Core Practicals at AS...

<p><i>Topic 6: Further Mechanics</i></p> <p><b>CP9:</b> Investigate the relationship between the force exerted on an object and its change of momentum</p> <p><b>CP10:</b> Use ICT to analyse collisions between small spheres, e.g. ball bearings on a table top</p>
<p><i>Topic 7: Electric &amp; Magnetic Fields</i></p> <p><b>CP11:</b> Use an oscilloscope or data logger to display and analyse the potential difference (p.d.) across a capacitor as it charges and discharges through a resistor</p>
<p><i>Topic 8: Nuclear &amp; Particle Physics</i></p>
<p><i>Topic 9: Thermodynamics</i></p> <p><b>CP12:</b> Calibrate a thermistor in a potential divider circuit as a thermostat</p> <p><b>CP13:</b> Determine the specific latent heat of a phase change</p> <p><b>CP14:</b> Investigate the relationship between pressure and volume of a gas at fixed temperature</p>
<p><i>Topic 10: Space</i></p>
<p><i>Topic 11: Nuclear Radiation</i></p> <p><b>CP15:</b> Investigate the absorption of gamma radiation by lead</p>
<p><i>Topic 12: Gravitational Fields</i></p>
<p><i>Topic 13: Oscillations</i></p> <p><b>CP16:</b> Determine the value of an unknown mass using the resonant frequencies of the oscillation of known masses</p>