

Data Sheet

GCSE (9–1) Gateway Combined Science A (Physics) **(J250/05, 06 & 11, 12)**

The information in this sheet is for the use of candidates following GCSE (9–1)
Combined Science A (J250/05, 06 & 11, 12)

A copy of this sheet will be provided as an insert within the question paper for each
component.

Copies of this sheet may be used for teaching.

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Equations in physics

$$(\text{final velocity})^2 - (\text{initial velocity})^2 = 2 \times \text{acceleration} \times \text{distance}$$

$$\text{change in thermal energy} = \text{mass} \times \text{specific heat capacity} \times \text{change in temperature}$$

$$\text{thermal energy for a change of state} = \text{mass} \times \text{specific latent heat}$$

$$\text{energy transferred in stretching} = 0.5 \times \text{spring constant} \times (\text{extension})^2$$

$$\text{potential difference across primary coil} \times \text{current in primary coil} = \text{potential difference across secondary coil} \times \text{current in secondary coil}$$

Higher tier only -

$$\text{force on a conductor (at right angles to a magnetic field) carrying a current} = \text{magnetic flux density} \times \text{current} \times \text{length}$$

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