



Oxford Cambridge and RSA

**Autumn 2021**

**GCSE (9–1) Physics B  
(Twenty First Century Science)**

**J259 01/02/03/04**

**Data Sheet**



**INSTRUCTIONS**

- Do **not** send this Data Sheet for marking. Keep it in the centre or recycle it.

**INFORMATION**

- This document has **2** pages.

## Equations in physics

change in internal energy = mass  $\times$  specific heat capacity  $\times$  change in temperature

energy to cause a change in state = mass  $\times$  specific latent heat

for gases: pressure  $\times$  volume = constant

(for a given mass of gas and at a constant temperature)

(final speed)<sup>2</sup> – (initial speed)<sup>2</sup> = 2  $\times$  acceleration  $\times$  distance

energy stored in a stretched spring =  $\frac{1}{2}$   $\times$  spring constant  $\times$  (extension)<sup>2</sup>

potential difference across primary coil  $\times$  current in primary coil =

potential difference across secondary coil  $\times$  current in secondary coil

**Higher tier only –**

**pressure due to a column of liquid = height of column  $\times$  density of liquid  $\times$  g**

**force = magnetic flux density  $\times$  current  $\times$  length of conductor**

**potential difference across primary coil  $\div$  potential difference across secondary coil =  
number of turns in primary coil  $\div$  number of turns in secondary coil**

**change in momentum = resultant force  $\times$  time for which it acts**

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