

**Data Sheet**  
**GCSE (9-1) Physics B (Twenty First Century Science)**  
**(J259/01-04)**

The information in this sheet is for the use of candidates following GCSE (9-1) Physics B (J259/01-04)

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.

Specimen

## Equations in physics

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

change in internal energy = mass x specific heat capacity x change in temperature

energy for a change of state = mass x specific latent heat

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

**force on a conductor (at right angles to a magnetic field) carrying a current = magnetic flux density x current x length of conductor**

potential difference across primary coil x current in primary coil = potential difference across secondary coil x current in secondary coil

**potential difference across primary coil ÷ potential difference across secondary coil = number of turns in primary coil ÷ number of turns in secondary coil**

for gases:

pressure x volume = constant (for a given mass of gas and at a constant temperature)

**pressure due to a column of liquid = height of column x density of liquid x g**