

Data Sheet
GCSE (9–1) Physics A (Gateway Science)
(J249/01–04)

The information in this sheet is for the use of candidates following GCSE (9–1) Physics A (J249/01–04)

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

change in thermal energy = **mass** x specific heat capacity x change in temperature

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

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

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

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

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

Higher tier only -

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

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

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