# AQA GCSE Equation Sheet

## Trilogy / Physics

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Equations in **bold are for Higher Tier** only

Equation highlighted in blue are for Physics only (not Trilogy)

kinetic energy = ½ x mass x speed$^2$

elastic potential energy = ½ x spring constant x extension$^2$

gravitational potential energy = mass x gravitational field strength x height

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

power = energy transferred / time

power = work done / time

$$\text{efficiency} = \frac{\text{useful output energy transfer}}{\text{total input energy transfer}}$$

$$\text{efficiency} = \frac{\text{useful power output}}{\text{total power input}}$$

charge flow = current x time

potential difference = current x resistance

total resistance = sum of individual resistances

power = potential difference x current

power = current$^2$ x resistance

energy transferred = power x time

energy transferred = charge flow x potential difference

density = mass / volume

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

pressure x volume = constant (for a gas)

weight = mass x gravitational field strength

work done = force x distance (moved along the line of action of the force)

force = spring constant x extension

moment = force x distance (perpendicular from the pivot to the line of action of the force)

pressure = force normal to a surface / area

**pressure = height of column x density of liquid x gravitational field strength**

distance travelled = speed x time

acceleration = change in velocity / time taken

(final velocity)$^2$ – (initial velocity)$^2$ = 2 x acceleration x distance

resultant force = mass x acceleration

**momentum = mass x velocity**

**force = change in momentum / time taken**

period = 1 / frequency

wave speed = frequency x wavelength

magnification = image height / object height

**force on a conductor carrying a current = magnetic flux density x current x length**

$$\frac{\text{potential difference across the primary coil}}{\text{potential difference across the secondary coil}} = \frac{\text{number of turns in primary}}{\text{number of turns in secondary}}$$

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