

These cover most of the equations students need to memorise for AQA GCSE Science.

Energy topic equations

Equation for...	Which variables are involved?	What are the symbols?	Equation?
Work done			
Energy of kinetic store			
Energy of gravitational store			
Power			
Efficiency (for energy)			
Efficiency (for power)			

**Mainly Electricity topic equations**

<b>Equation for...</b>	<b>Which variables are involved?</b>	<b>What are the symbols?</b>	<b>Equation?</b>
Charge flow			
Potential difference			
Electrical power	potential difference current		
Electrical power	current resistance		
Energy in electrical transfer			
Density			
Wave speed			

**Forces topic equations**

<b>Equation for...</b>	<b>Which variables are involved?</b>	<b>What are the symbols?</b>	<b>Equation?</b>
Weight			
Force on a spring			
Moment of a force			
Pressure			
Distance travelled			
Acceleration			
Resultant force			

Energy topic equations

Equation for...	Which variables are involved?	What are the symbols?	Equation?
Work done	force distance	F S	$W = F s$
Energy of kinetic store	mass velocity	m v (lower case)	$E_k = \frac{1}{2} m v^2$
Energy of gravitational store	mass, gravitational field strength height	m, g h	$E_p = m g h$
Power	energy transferred OR work done time	E or W t	$P = E/t$ $P = W/t$
Efficiency (for energy)	useful output energy transfer total input energy transfer	Efficiency = $\frac{\text{useful output energy}}{\text{total input energy}}$	
Efficiency (for power)	useful power output total power input	Efficiency = $\frac{\text{useful power output}}{\text{total power input}}$	

Mainly Electricity topic equations

Equation for...	Which variables are involved?	What are the symbols?	Equation?
Charge flow	current time	I t	$Q = I t$
Potential difference	current resistance	I R	$V = I R$
Electrical power	potential difference current	V (upper case) I	$P = V I$
Electrical power	current resistance	I R	$P = I^2 R$
Energy in electrical transfer	charge flow potential difference	Q V	$E = Q V$
Density	mass volume	m V (upper case)	$\rho = m/V$
Wave speed	frequency wavelength	f $\lambda$	$v = f \lambda$

**Forces topic equations**

<b>Equation for...</b>	<b>Which variables are involved?</b>	<b>What are the symbols?</b>	<b>Equation?</b>
Weight	mass gravitational field strength	m g	$W = m g$
Force on a spring	spring constant extension (change of length)	k e	$F = k e$
Moment of a force	force distance from pivot	F d	Moment = F d
Pressure	force cross-sectional area	F A	$P = F / A$
Distance travelled	speed time	v (lower case) t	$d = v t$
Acceleration	change in velocity time	$\Delta v$ t	$a = \Delta v / t$
Resultant force	mass acceleration	m a	$F = m a$