



**GCSE Combined Science: Trilogy (8464)**  
**GCSE Combined Science: Synergy (8465)**

**Physics Equations Sheet**

**[Turn over]**

1	<p><b>(final velocity)<sup>2</sup> – (initial velocity)<sup>2</sup></b>  <b>= 2 × acceleration × distance</b></p>	$v^2 - u^2 = 2 a s$
2	<p><b>elastic potential energy</b>  <b>= 0.5 × spring constant × (extension)<sup>2</sup></b></p>	$E_e = \frac{1}{2} k e^2$
3	<p><b>change in thermal energy</b>  <b>= mass × specific heat capacity</b>  <b>× temperature change</b></p>	$\Delta E = m c \Delta \theta$
4	<p><b>period = <math>\frac{1}{\text{frequency}}</math></b></p>	$T = \frac{1}{f}$

5	<p><b>force on a conductor (at right angles to a magnetic field) carrying a current</b>  <b>= magnetic flux density × current × length</b></p>	$F = B I l$
6	<p><b>thermal energy for a change of state</b>  <b>= mass × specific latent heat</b></p>	$E = m L$
7	<p><b>potential difference across primary coil</b>  <b>× current in primary coil</b>  <b>= potential difference across secondary coil</b>  <b>× current in secondary coil</b></p>	$V_p I_p$ $= V_s I_s$

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**Equations 5 and 7 are for Higher Tier only.**

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**Insert for GCSE Combined Science:  
Trilogy (8464) and GCSE Combined  
Science: Synergy (8465)/E4**