

Equation	Subject	Solution
$R = \frac{V}{I}$	V	
$I = \frac{\Delta Q}{\Delta t}$	Q	
$\epsilon = \frac{E}{Q}$	Q	
$\epsilon = I(R + r)$	R	
$\rho = \frac{RA}{L}$	A	
$\rho = \frac{RA}{L}$	R	
$v^2 = u^2 + 2as$	u	
$s = \frac{(u+v)}{2} t$	t	
$v = u + at$	a	
$s = ut + \frac{at^2}{2}$	t	



Physics

Please complete one line from the task list below. All students must complete the middle task:

Design an electrical circuit which allows the upstairs landing light to be turned on by a switch upstairs and downstairs (and explain your diagram)	Find 5 common physics misconceptions on YouTube and ask 5-10 people their understanding. Write a brief report of your findings	Write an essay about the changing theories of light over time. Include details of key concepts, experiments and scientists
Produce a Timeline for the discovery of particles, from the atom to now.	Is CERNs LHC a waste of money? Write a report (up to 500 words)	Complete Rearranging equations task attached
Obtain a copy of a Physics Review, Focus or New scientist magazine and write a summary of one interesting physics article	Create a revision video or podcast to help a KS4 student revise one aspect of GCSE physics and then share on social media	Make an animation (eg-stop motion) to illustrate AND EXPLAIN one of the following concepts <ul style="list-style-type: none">• Electrical current , potential difference and resistance• Projectile motion• Wave superposition

Suggested book/reading list:

Surname, Initial., *Title of book* (Publisher, Year of Publication).

- CGP Ltd, Head Start to A level Physics (CGP, 2015)
- Johnson K et al, Advanced Physics For You Second Edition (OUP, 2015)
- Lowe, T. at al, Calculations for A level Physics fourth edition (Nelson Thornes, 2002)
- Tear, C., Maths Skills for A level Physics (Nelson Thornes, 2013)

Wider Reading

- Bryson, B., A Short history of nearly everything (Black Swan, 2004)
- Hawking, S., A Brief History of Time (Bantam Books. 1989)