



Preparation for A Level Physics

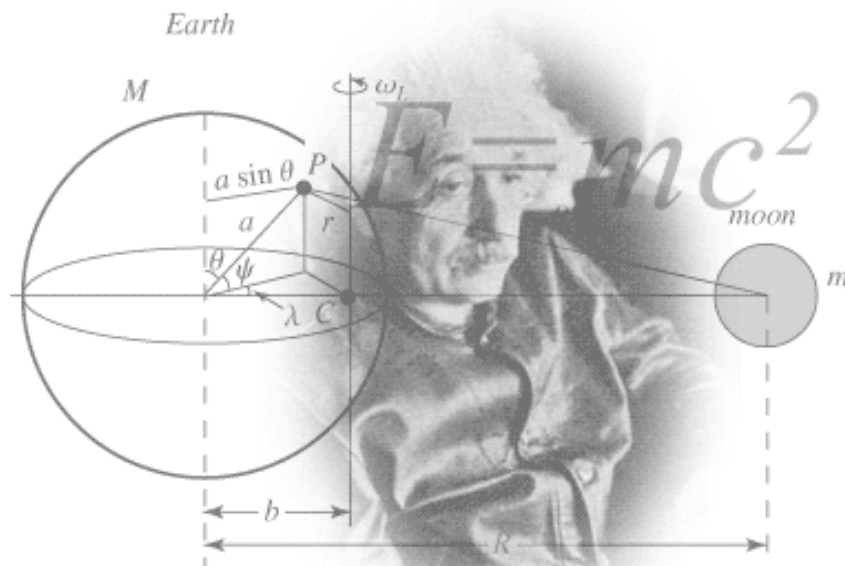


Figure 1 <http://scienceworld.wolfram.com/physics/images/main-physics.gif>

This pack contains a programme of activities and resources to prepare you to start an A level in Physics in September. It is aimed to be used after you complete your GCSE, throughout the remainder of the Summer term and over the Summer Holidays to ensure you are ready to start your course in September.



Specification:

OCR Physics Specification A:

<http://www.ocr.org.uk/qualifications/as-a-level-gce-physics-a-h156-h556-from-2015/>

*Of the books, video clips and research activities listed below, you need to choose **at least three**. Immediately after each of these (before you forget), you should complete the Sixth Form Induction Tasks Worksheet.*

If you are unsure of what to go for, look for those marked with an asterix *.

Book Recommendations:

- *Carlo Rovelli: Seven Brief Lessons on Physics
- Albert Einstein: Relativity
- Stephen Hawking: A Brief History of Time

Video Clip Recommendations:

- **Mind-Bending questions from Physics* (TED Playlist)
https://www.ted.com/playlists/475/mind_bending_questions_from_ph
- **Shock and Awe, The Story of Electricity** – A 3 part BBC documentary that is essential viewing if you want to see how our lives have been transformed by the ideas of a few great scientists a little over 100 years ago. The link below takes you to a stream of all three parts joined together but it is best watched in hourly instalments.

<https://www.youtube.com/watch?v=Gtp51eZkwol>

- *Beauty, Truth and ... physics?
https://www.ted.com/talks/murray_gell_mann_on_beauty_and_truth_in_physics
- The Map of Physics
<https://youtu.be/ZihywtixUYo>



Research activity:

To get the best grades in A Level Physics you will have to get good at completing independent research and making your own notes on difficult topics. Below are links to 5 websites that cover some interesting Physics topics.

Using the Cornell notes system: <http://coe.jmu.edu/learningtoolbox/cornellnotes.html> make 1 page of notes **from each site** covering a topic of your choice.

a) <http://home.cern/about>

CERN encompasses the Large Hadron Collider (LHC) and is the largest collaborative science experiment ever undertaken. Find out about it here and make a page of suitable notes on the accelerator.

b) http://joshworth.com/dev/pixelspace/pixelspace_solarsystem.html

The solar system is massive and its scale is hard to comprehend. Have a look at this award winning website and make a page of suitable notes.

c) <https://phet.colorado.edu/en/simulations/category/html>

PhET create online Physics simulations when you can complete some simple experiments online. Open up the resistance of a wire html5 simulation. Conduct a simple experiment and make a one page summary of the experiment and your findings.

d) <http://climate.nasa.gov/>

NASA's Jet Propulsion Laboratory has lots of information on Climate Change and Engineering Solutions to combat it. Have a look and make notes on an article of your choice.

e) <http://www.livescience.com/46558-laws-of-motion.html>

Newton's Laws of Motion are fundamental laws for the motion of all the object we can see around us. Use this website and the suggested further reading links on the webpage to make your own 1 page of notes on the topics.

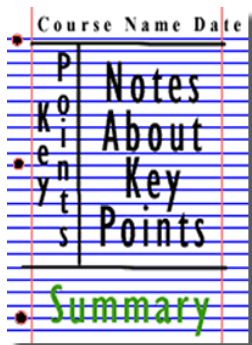


Figure 2: <http://coe.jmu.edu/learningtoolbox/images/noteb4.gif>