



Physics Summer Task 2020

So, you think you would like to study: PHYSICS

Summer Task Title / Instructions:

Task 1

Complete the research activity – pages 6 of this booklet.

Task 2

Register with Isaac Physics, <https://isaacphysics.org/> and complete tasks as outlined on page 7. Note your connection code is **GAENDQ** which will allow you to access the tasks that have been set for you. These are summarised on page 6 below. Note there is no need to print any tasks out as all tasks can be completed on line.

Task 3

CGP have opened free on-line access to their Head Start to A Level Sciences range. This fantastic Head Start book is the ideal way to bridge the gap between GCSE and A-Level Physics It recaps all the crucial topics you'll need to remember from GCSE, with crystal-clear study notes and examples, plus practice questions to test your understanding. It also includes introductions to some of the key topics you'll meet at A-Level. Please can you work your way through this on-line book and answer all questions with full explanations. Link for Physics book below.

https://www.amazon.co.uk/Head-Start-level-Physics-Level-ebook/dp/B00VE2NII4/ref=tmm_kin_swatch_0?encoding=UTF8&qid=&sr=

Suggested Additional Reading:

See additional document

Suggested Visit:

See page 5 for ideas for day trips across the country.

Please submit the task to your teacher on the first lesson in September. Feel free to do multiple summer tasks if you are unsure on what subjects to study.

So you are considering A Level Physics?

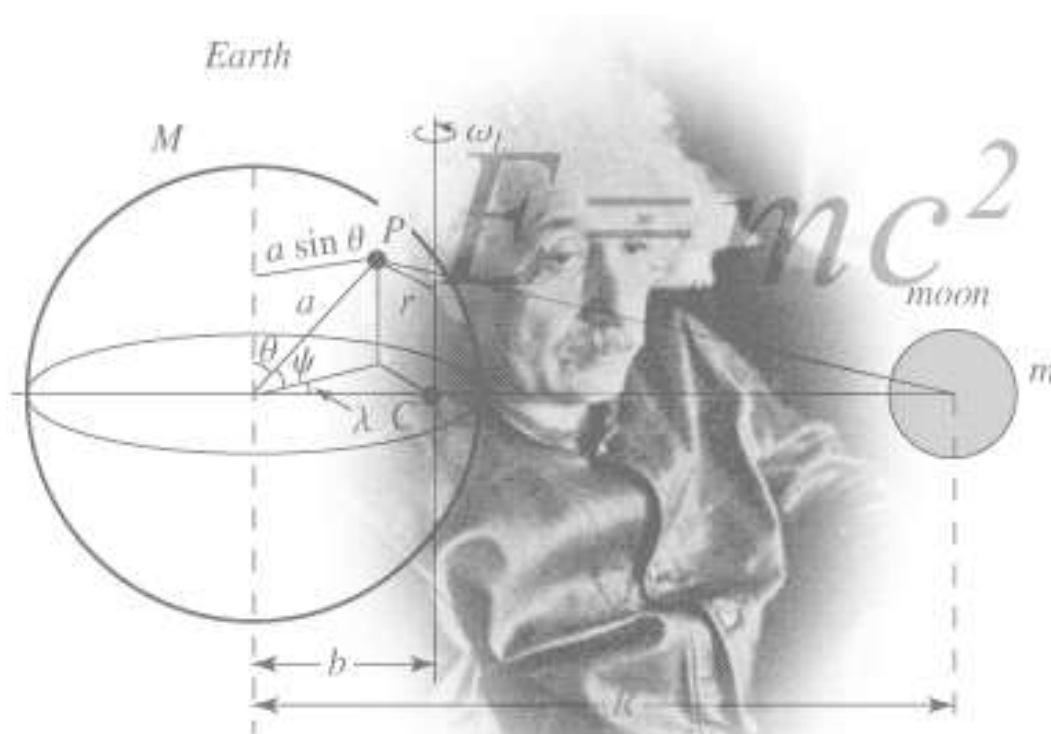


Figure 1 <http://scienceworld.wolfram.com/physics/images/main-physics.gif>

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.

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://lsc.cornell.edu/notes.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.

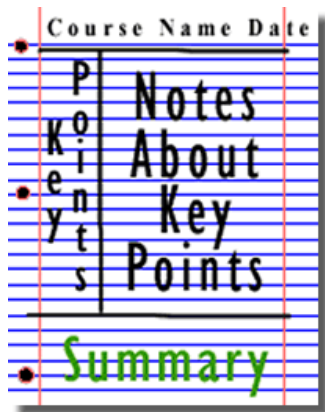


Figure 2: <http://coe.jmu.edu/learningtoolbox/images/noteb4.gif>

Isaac Physics.

Isaac Physics a project designed to offer support and activities in **physics** problem solving to students from GCSE level through to university.

Connection Code : GAENDQ

List of tasks to complete.

1.	1. Units (Due: 01/09/2020)
2.	GCSE to A level transition - skills (Due: 01/09/2020)
3.	Physics & Maths, Level 1 (Due: 01/09/2020)
4.	Physics, Level 1 (Due: 01/09/2020)
5.	Kinematics, Level 1 (Due: 01/09/2020)
6.	Mechanics (Due: 01/09/2020)
7.	A1 Using and Rearranging Equations (Due: 01/09/2020)

Ideas for Day Trips

Here are some suggestions for some physics-themed days out for you to enjoy over the summer break. Try and have some fun as you prepare for two tough but rewarding years ahead!

Northern England and Scotland

1. **Jodrell Bank Observatory** – Cheshire – one of the largest moveable radio telescopes in the world and the location of the filming of the BBC's Stargazing Live. The site has both indoor and outdoor activities.
2. **MOSI** – Manchester – Massive free museum showing how science helped Britain lead the way through the industrial revolution. Contains hands on exhibits and displays and often host regular travelling exhibitions.
3. **Liverpool World Museum / Spaceport** – Liverpool/Wirral – Start the day off at an excellent family science museum with a top floor dedicated to astronomy including a planetarium. Take the ferry cross the Mersey to another family friendly museum dedicated to spaceflight.
4. **Kielder Observatory** – Northumberland – Book ahead at this popular observatory in the midst of the darkest night skies the UK has to offer. Regular tours and opportunities to view the stars through professional telescopes take place on a nightly basis.
5. **Glasgow Science Centre** - The Centre is home to hundreds of interactive exhibits throughout the three engaging floors

The Midlands and Wales

1. **Electric Mountain** – Snowdonia – Set against a mountainous backdrop is a working pumped storage power station. Take a tour deep into the heart of the mountain and see the turbines spring into action to meet our ever increasing demand for electricity. Take a stroll up on of the UKs highest peaks in the afternoon.
2. **National Space Centre** – Leicester - With six interactive galleries, the UK's largest planetarium, unique 3D Simulator experience, the award-winning National Space Centre in Leicester is an out of this world visitor attraction
3. **Alton Towers** – Staffordshire – Treat yourself to a go on a few rollercoasters whilst discussing Newton's Laws. You may want to download and take these handy rollercoaster physics notes with you <http://www.explainthatstuff.com/rollercoasters.html>

Southern England

1. **Royal Observatory** – London - Visit the Royal Observatory Greenwich to stand on the historic Prime Meridian of the World, see the home of Greenwich Mean Time (GMT), and explore your place in the universe at London's only planetarium.
2. **Herschel Museum of Astronomy** – Bath – As you walk around the picturesque Roman city – take an hour or two out at the home of one of the great scientists – discoverer of Infra-red radiation and Uranus.
3. **@Bristol** – Bristol - home to the UK's only 3D Planetarium and one of the biggest science centres.
4. **The Royal Institution** – London – The birthplace of many important ideas of modern physics, including Michael Faraday's lectures on electricity. Now home to the RI Christmas lectures and many exhibits of science history.