



# Summer Tasks



## A Level Physics Summer Project

Your task is to revisit the topics you have studied most recently in the summer term.

The factsheets and templates will be given to you in class.

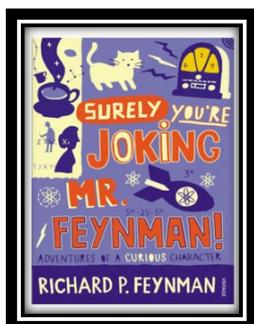
1. Study the 4 Physics factsheets on – SHM, Circular Motion, Mechanical Oscillations and Capacitance.
2. For each topic, revisit and reframe the key facts information on the template provided. Then, study the exam question workshop and typical exam questions to complete the exam questions section of the template provided.
3. You will need to bring your completed project work to the first lessons in September.

# Additional Reading/ Supporting Resources



Below is a selection of books that should appeal to a physicist – someone with an enquiring mind who wants to understand the universe around us. None of the selections are textbooks full of equation work (there will be plenty of time for that!) instead each provides insight to either an application of physics or a new area of study that you will be meeting at A Level for the first time.

## 1. Surely You're Joking Mr Feynman: Adventures of a Curious Character

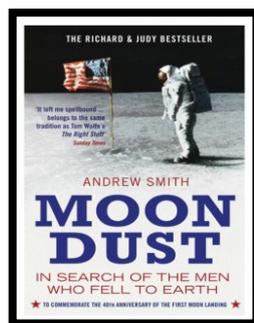


ISBN - 009917331X - Richard Feynman was a Nobel Prize winning Physicist. In my opinion he epitomises what a Physicist is. By reading this books you will get insight into his life's work including the creation of the first atomic bomb and his bongo playing adventures and his work in the field of particle physics.

(Also available on Audio book).

<https://www.waterstones.com/books/search/term/surely+youre+joking+mr+feynman++adventures+of+a+curious+character>

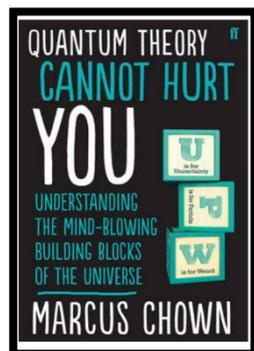
## 2. Moondust: In Search of the Men Who Fell to Earth



ISBN – 1408802384 - One of the greatest scientific achievements of all time was putting mankind on the surface of the moon. Only 12 men made the trip to the surface, at the time of writing the book only 9 are still with us. The book does an excellent job of using the personal accounts of the 9 remaining astronauts and many others involved in the space program at looking at the whole space-race era, with hopefully a new era of space flight about to begin as we push on to put mankind on Mars in the next couple of decades.

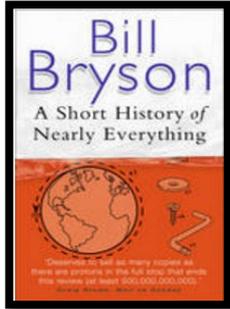
<https://www.waterstones.com/books/search/term/moondust++in+search+of+the+men+who+fell+to+earth>

## 3. Quantum Theory Cannot Hurt You: Understanding the Mind-Blowing Building Blocks of the Universe



ISBN - 057131502X - Any Physics book by Marcus Chown is an excellent insight into some of the more exotic areas of Physics that require no prior knowledge. In your first year of A-Level study you will meet the quantum world for the first time. This book will fill you with interesting facts and handy analogies to whip out to impress your peers!

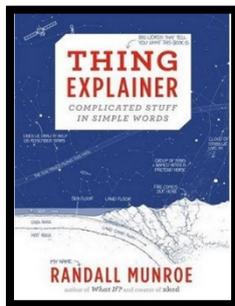
4. **A Short History of Nearly Everything**



**ISBN – 0552997048** - A modern classic. Popular science writing at its best. A Short History of Nearly Everything Bill Bryson's quest to find out everything that has happened from the Big Bang to the rise of civilization - how we got from there, being nothing at all, to here, being us. Hopefully by reading it you will gain an awe-inspiring feeling of how everything in the universe is connected by some fundamental laws.

<https://www.waterstones.com/books/search/term/a+short+history+of+nearly+everything>

5. **Thing Explainer: Complicated Stuff in Simple Words**



**ISBN – 1408802384** - This final recommendation is a bit of a wild-card – a book of illustrated cartoon diagrams that should appeal to the scientific side of everyone. Written by the creator of online comic XTCD (a great source of science humour) is a book of blueprints from everyday objects such as a biro to the Saturn V rocket and an atom bomb, each one meticulously explained BUT only with the most common 1000 words in the English Language. This would be an excellent coffee table book in the home of every scientist.

<https://www.waterstones.com/book/thing-explainer/randall-munroe/9781473620919>

Additional Reading Log:

Additional Reading Title	Dates?	Points of interest	How does it link to the course?

Online Clips / Series

1. **Minute Physics** – Variety of Physics questions explained simply (in felt tip) in a couple of minutes. Addictive viewing that will have you watching clip after clip – a particular favourite of mine is “Why is the Sky Dark at Night?”

<https://www.youtube.com/user/minutephysics>

2. **Wonders of the Universe / Wonders of the Solar System** – Both available of Netflix as of 17/4/16 – Brian Cox explains the Cosmos using some excellent analogies and wonderful imagery.

3. **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. Don't forget to boo when you see Edison. (alternatively watch any Horizon documentary – loads of choice on Netflix and the I-Player)

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

4. **NASA TV** – Online coverage of launches, missions, testing and the ISS. Plenty of clips and links to explore to find out more about applications of Physics in Space technology.

<http://www.nasa.gov/multimedia/nasatv/>

5. **The Fantastic Mr. Feynman** – I recommended the book earlier, I also cannot recommend this 1 hour documentary highly enough. See the life's work of the “great explainer”, a fantastic mind that created mischief in all areas of modern Physics.

[BBC - The Fantastic Mr Feynman - YouTube](#)

#### Online Journals/Podcasts

1. <https://physicsworld.com/> - you can access weekly podcasts through this website or why not subscribe through you usual podcast provider.

2. <https://www.livescience.com/> - For the science geek in everyone, Live Science breaks down the stories behind the most interesting news and photos on the Internet, while also digging up fascinating discoveries that hit on a broad range of fields, from dinosaurs and archaeology to wacky physics and astronomy to health and human behavior. If you want to learn something interesting every day, Live Science is the place for you.