





# PHYSICS

|                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p><b>EXPECTATIONS</b></p>                                                                                     | <p>➤ Remind yourself of the subject expectations and the syllabus by watching the Subject Video on the school website:<br/> <a href="https://sixthform.fulford.york.sch.uk/curriculum-offer/">https://sixthform.fulford.york.sch.uk/curriculum-offer/</a></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <p><b>PURCHASE</b></p>        | <p>Recommended for both Y12 &amp; Y13: CGP AQA A-Level Physics Year 1 &amp; 2 Student Book. ISBN: 9781789080483</p> <p>Sold in school at the start of Y12 for less than the cost on Amazon.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p><b>REVIEW</b></p>          | <p>Core content from GCSE. The most important units for Term 1 are:</p> <p>P2 – Electricity<br/> P4 – Atomic Structure<br/> P5 – Force &amp; Extension (Hooke’s Law)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <p><b>READ</b></p>           | <p>Suggestions for wider reading:</p> <p><b>Moondust: In Search of the Men Who Fell to Earth</b> ISBN: 1526611570<br/> This book uses the personal accounts of 9 astronauts and many others involved in the space program, looking at the whole space-race era.</p> <p><b>Surely You're Joking Mr Feynman: Adventures of a Curious Character</b> ISBN: 009917331X<br/> By reading this book you will get insight into his life’s work including the creation of the first atomic bomb and his work in the field of particle physics.</p> <p><b>Quantum Theory Cannot Hurt You: Understanding the Mind-Blowing Building Blocks of the Universe</b> ISBN: 0571235468<br/> Any physics book by Marcus Chown is an excellent insight into some of the more exotic areas of physics that require no prior knowledge</p> <p><b>A short History of Nearly Everything</b> ISBN: 0552997048<br/> A whistle-stop tour through many aspects of history from the Big Bang to now. This is a really accessible read that will re- familiarise you with common concepts and introduce you to some of the more colourful characters from the history of science.</p> <p><b>Thing Explainer: Complicated Stuff in Simple Words</b> ISBN: 9781473620919<br/> 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.</p> |
| <p><b>WATCH/LISTEN</b></p>  | <p><b>Even Bananas (Fermilab video podcast)</b></p> <p>Available at: <a href="https://www.youtube.com/playlist?list=PLCfRa7MXBEsp1cvlsZ4shi6MrHb-tnAqT">https://www.youtube.com/playlist?list=PLCfRa7MXBEsp1cvlsZ4shi6MrHb-tnAqT</a></p> <p>Our universe is full of mysteries - especially when it comes to the smallest scale of nature! Explore the fascinating world of fundamental particles called neutrinos with Fermilab scientist Dr. Kirsty Duffy.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

**From mach-20 glider to hummingbird drone**

Available at: [https://www.ted.com/talks/regina\\_dugan\\_from\\_mach\\_20\\_glider\\_to\\_humming\\_bird\\_drone/up-next?language=en](https://www.ted.com/talks/regina_dugan_from_mach_20_glider_to_humming_bird_drone/up-next?language=en)

"What would you attempt to do if you knew you could not fail?" asks Regina Dugan, then director of DARPA, the Defense Advanced Research Projects Agency. In this talk, she describes some of the extraordinary projects that her agency has created.



**Why is our universe fine-tuned for life?**

Available at: [https://www.ted.com/talks/brian\\_greene\\_why\\_is\\_our\\_universe\\_fine\\_tuned\\_for\\_life?language=en](https://www.ted.com/talks/brian_greene_why_is_our_universe_fine_tuned_for_life?language=en)

Brian Greene shows how the unanswered questions of physics (starting with a big one: What caused the Big Bang?) have led to the theory that our own universe is just one of many in the "multiverse."



**The fascinating physics of everyday life**

Available at : [https://www.ted.com/talks/helen\\_czerski\\_fun\\_home\\_experiments\\_that\\_teach\\_you\\_physics?language=en](https://www.ted.com/talks/helen_czerski_fun_home_experiments_that_teach_you_physics?language=en)

Physicist Helen Czerski presents various concepts in physics you can become familiar with using everyday things found in your kitchen.



**We need nuclear power to solve climate change**

Available at : [https://www.ted.com/talks/joe\\_lassiter\\_we\\_need\\_nuclear\\_power\\_to\\_solve\\_climate\\_change?language=en](https://www.ted.com/talks/joe_lassiter_we_need_nuclear_power_to_solve_climate_change?language=en)

Joe Lassiter is focused on developing clean, secure and carbon-neutral supplies of reliable, low-cost energy. His analysis of the world's energy realities puts a powerful lens on the touchy issue of nuclear power.



**COMPLETE**



PiXL Gateway Transition. Please see additional materials.