

# Preparation for A-level Physics

## April 2020

Due to the events unfolding around COVID-19, GCSE exams are not taking place this year. This means it is more important than ever to take responsibility for your own knowledge and understanding of subjects chosen for A-level. To this end, here are a series of activities designed to help you achieve and maintain a solid grasp on the Physics that is required to begin the A-level course.

### **Task One** (to be brought to class in September)

Complete the pre-knowledge question pack. This is a fairly lengthy set of questions that cover much of the content taught at GCSE, broken up into topics. The answers for these questions have also been provided so you can self-assess your work. If there are any topics that you're uncertain of, or didn't do as well as you expected on, then it would be worth brushing up using your preferred revision website.

### **Task Two**

Read a physics book! This site: [http://www.thestudentroom.co.uk/wiki/Recommended Physics Reading](http://www.thestudentroom.co.uk/wiki/Recommended_Physics_Reading) has some great suggestions. If you are interested in particle physics, I would also recommend "The God Particle: If the Universe is the Answer, What is the Question?" (Leon Lederman) which centres around the search for the Higgs Boson. Or "Beyond the God Particle" which is a follow up book written after the Higgs boson was actually discovered. Particle physics is studied in year 13. These books will go beyond what we will study in A level, but will help give you a flavour for what Physics is all about – and hopefully drive you to learn more about how the universe works!

### **Task Three** (to be brought to class in September)

Research something related to Physics and write up your findings, filling roughly one side of A4 (font size 11, single spacing if using a word-processor). This can be about whatever you like – a recent breakthrough, or a historically significant discovery, or a particular law of nature, or a famous scientist, etc., as long as it relates to Physics somehow.

### **Task Four**

Listen to a Physics or science podcast series! We recommend:

- Infinite Monkey Cage

- Hubbletalk
  - Ask a Space Man
  - Physics World
  - No Such Thing as a Fish
- ... but there are many more!

### **Task Five**

Watch some science fiction films! Even though these often contain inaccuracies and “bad science”, they are both a source and culmination of wonder and intrigue at the way the universe works. A few of my favourites include:

- Moon (2009)
- Primer (2004)
- The Matrix (1999)
- Her (2013)
- Interstellar (2014)

### **Task Six** (to be brought to class in September)

Complete the A Level Physics Transition Baseline Assessment. You should spend no more than 40 minutes completing this, and should not use any notes, books, or the Internet to help you (i.e. treat it like a test).

### **Extras**

There is also a question pack for each of the eight GCSE topics (with mark schemes at the end of each document) available for you to download. It is up to you how and when you use these, but it is advisable that you think about Physics regularly to keep your wits sharp and ready for year 12. If you have any questions or comments regarding any of this work, feel free to email Dr Carlyle at [jcarlyle@bwsgirls.org](mailto:jcarlyle@bwsgirls.org). We look forward to seeing you in the new academic year!