

Hello prospective Physics students

This transition pack is aimed at all Yr11 students who are considering taking A Level physics at M.C.S. from September. There is a huge range of interesting, informative and stimulating material online for those who wish to discover more about physics and some places to explore are provided in a list below. However, the bulk of this material is targeted at the WJEC A Level physics course that you would start in the Autumn.

Even though the material concentrates only on this one course, there is still quite a lot of new information and problems to work through. Dip in and out of the materials as you want - please do not feel as if you need to do everything! There is a range of material to be used as you prefer – to suit the different approaches to learning that you will all have. Some may wish to just scan the course outline so that they know what to expect (*AS Level Intro Physics* booklet: number of exams, topics etc.); some may want to just get into answering questions and problem solving (*Isaac Physics*) and others may want to look at a past paper with the revision guide in front of them to get an idea how they will be assessed. Whatever you do, and however much you do, is extra preparation, above and beyond expectations.

Hopefully, this transition pack will give you a clear idea what to expect from the course, stimulate some interest and ensure you can have a strong start in September.

The material provided:

- **AS Level Intro Physics booklet**

This is our 'student friendly' version of the WJEC specification. It contains the detailed break-down of everything you will be taught. Page2 is an overview of the course, p.3-10 give useful information required for exams and the detailed specification is from p.11 onwards.

- **AS revision pdf produced by Bangor University**

This free resource was produced by Bangor university with support from WJEC. It is targeted at the AS course and exams that students will prepare for. Worth scanning through so you can get a feel for what is covered and the level of work.

- **2016 Unit1 Past Paper**

At the end of the AS course, students sit two examinations: Unit1 and Unit2. We teach Unit1 content from September to December in Yr12. This is the Unit1 paper from 2016. You can look at it (with revision guide above) to judge how you will be assessed.

- **Isaac Physics**

A Physics problem-solving 'Open Platform for Active Learning' website, supported by the University of Cambridge. It was created to allow students to practise *doing* physics and solve problems. It is a large bank of questions that are instantly marked as you enter your answer. (Only the computer knows the answers. The rest of us – including those that manage the site – have to work them out!). The problems go from higher GCSE (level1) to undergraduate (level6).

You can access the website without creating an account. If you do, then please try to navigate to GCSE or Transition materials. ***I recommend that you create an account*** on this site (easy to do) and then join the group below. This can be done

via the link below or by entering the code below (click through MENU – My ACCOUNT – TEACHER CONNECTIONS). Once you join this group, various question ‘Boards’ will be assigned so you do not have to go searching for appropriate materials to try. Note – this is a problem solving website. Do not get disheartened by getting things wrong. I frequently have to make several attempts at most questions!

<https://isaacphysics.org/account?authToken=B2QKYJ>

Code: **B2QKYJ**

- At the time of writing, it is also the case that you can get CGP’s ‘Head Start to A Level Physics’ from Amazon at £0.00 if it is the Kindle edition. This text is not specifically written for the WJEC course, but covers the generic information and skills required for A Level.

Some online materials to explore are listed below. This is a small selection of the most popular – there will be links to many others. These all have active Twitter accounts also.

- **Institute of Physics:** I am a Student Section. This contains other links – such as to guides on University courses:
<https://www.iop.org/education/student/index.html>
- **Physics Girl.** You Tube channel from ex-MIT student and science communicator Dianna Cowern:
<https://www.youtube.com/channel/UC7DdEm33SyaTDtWYGO2CwdA>
- **Veritasium.** You Tube channel from science communicator Derek Muller:
<https://www.youtube.com/channel/UCHnyfMqiRRG1u-2MsSQLbXA>
- **CERN.** Home of the world’s largest particle accelerator. There is a wealth of material here aimed at different audiences. You can even explore the site in Minecraft (Education Edition free from Hwb) – check out ‘ATLASCraft’!
<https://home.cern/>
<https://atlascraft.web.cern.ch/>
- **Physics.Org.** This is really run by IOP. This section of the site (‘Explore’) allows you to search the best websites on topics you want to search (eg. try Higgs Boson). You can set your age, knowledge level etc.
<http://www.physics.org/explore.asp>
- **Feynman, *Physics is fun to imagine*.** Richard Feynman is one of the most famous physicists of the later C20th. He is best known for his work in Quantum Mechanics. Here is a short clip of him talking from TED Talks. Other links from TED are there to explore.
https://www.ted.com/talks/richard_feynman_physics_is_fun_to_imagine

- **Elementary Einstein.** While we do not study Relativity in our A Level course, many students do have questions about it. This website can help introduce the topic.
<https://www.einstein-online.info/en/category/elementary/>