

A-Level Physics Summer Holiday Homework

Section 1 – Keeping GCSE Content Fresh

The vast majority of the A-Level Physics course builds on content from the GCSE specification, because of this it is vital to have a strong, secure knowledge of this content. Over the course of the summer holiday you should spend some time preparing for an introductory test which will be sat during a lesson in the third week of the course. The test will be made up of a mixture of GCSE and A-Level questions, but will only test you on knowledge from the GCSE specification.

The questions selected will also only test you on mathematical skills in line with requirements from the GCSE course. You should be able to rearrange, and apply any equations from the GCSE course, you won't have to recall any equations (they will be given to you in a formula book).

The topics which will be covered in the test are:

- Energy and energy transfers
- Forces
- Waves
- Particle Model of Matter
- Atomic Structure

Section 2 – Research Project

Research Newton's 3 Laws of Motion – for each law:

- Formal explanation of the law along with your own, simplified explanation
- A practical example of how this law has an impact on everyday life
- A photo/labelled diagram showing the practical example

While conducting your research you should keep track of what sources you use and make a list of these references at the bottom of your work.

Section 3 – Materials Presentation

Your final Summer work task is to research and make a Power Point presentation about a material of your choice (the more unusual and interesting the better). Your Power Point should include:

- An introductory slide stating what material you have chosen and why
- A description of the chemical structure of the material
- A description of the properties of the material – try to link the chemical structure to these properties, if the material is a shape memory alloy what about its structure enables it to return to its undistorted form?
- A list of applications of the material and reasons why it is suitable for each use

As above, while you are making your presentation make sure you are compiling a list of sources you use, these sources should be saved as a list on the last slide of your Power Point presentation.

