

A Level summer transition project

Physics

The following task/ tasks are to be completed and brought to your **first lesson** in September.

Introduction

In the GCSE course most of the particle theory work that you did focussed on what effect the electron has on our lives (as in the static/electricity unit), and how atoms are made up. In the A Level course we need to unpick some of these assumptions and delve deeper into what makes up an atom. You need to approach the physics course with an open mind... you are going to have lots of your misconceptions from GCSE challenged, but after studying the course you will be able to explain in far more detail the world around you.

This task is designed to introduce you to a new world of particle physics, and provoke more questions than it answers. Come armed with your questions in September and we will be able to answer most of them.

The Task

From the Greeks to present times people have wondered what stuff is made from. Watch the two video links as an introduction to the topic.

<https://www.youtube.com/watch?v=HVxBdMxgVX0>

<https://www.youtube.com/watch?v=WGWIT8SqXLM>

1. Prepare a timeline of different discoveries for particle physics. Include important personalities, experiments, equipment and the particles discovered. Also include any false starts like the plum pudding model.
2. CERN is a project that is in the media all the time, but what actually is it? Write a report to explain:
 - a. What a particle accelerator is.
 - b. What CERN physically is.
 - c. How CERN works.
 - d. What are the major sensors.
 - e. What major discoveries have come from CERN.
 - f. What do scientists hope to discover in the future at CERN or other accelerators.
3. Include a reference section and prepare a list of questions that you hope to get answered in the particle physics module. i.e. what did you find out that you didn't understand.

Who to contact if you should require further assistance

Mrs M Hall mhall@glossopdale.school Mr N Williams nwilliams@glossopdale.school