Year 12 Transition Work
A Level Physics Year 1

This work is designed to introduce you to one of the first topics you will encounter in Physics. A good understanding of this topic is vital as it underpins many things you will learn about.

You will need to research using the internet to be able to complete this task properly.

Please find a suitable website aimed at post-16 students and NOT Wikipedia or Yahoo Answers (as it will be far too complicated or just plain wrong!!).

Some examples of suitable resources include (you will probably need to use more than one to help you):
http://particleadventure.org/

http://tap.iop.org/atoms/index.html

http://home.web.cern.ch/

- Using a diagram; describe the inside of an atom. Explain the term isotope. Represent 3 different atoms.

- What force keeps protons and neutrons in a nucleus? Explain why some atoms are stable and others are unstable. Describe how atoms can become stable; what process do they undergo to achieve this?

- What is antimatter?

- What does CERN stand for and what goes on there?

- What modern day discoveries and developments have come about due to work at CERN?

- Describe what happens when matter and anti-matter meet. Discuss whether anti-atoms are possible.

- Describe what is meant by a particle interaction. Describe (with the help of diagrams) 3 different types of particle interaction.

- Explain why charged particles attract or repel each other. Describe an exchange particle.

- Explain the photoelectric effect.

- Why was Einstein's photon model revolutionary?

- Explain what is meant by the terms "ionisation" and "excitation", of an atom.

- Explain the differences between transverse and longitudinal waves. Describe a physics test to distinguish between the two.