Academic Enrichment Sessions - Lucy Cavendish College

Physics - Session 2

Hi Year 12 Physics Students :-)
Welcome back to Session 2 of Physics.

Like last time I will expect you to have your calculator, Equation/Formula booklet and pen and paper with you as you will be doing practice questions.

During this session I plan to cover some of the trickier bits of content in the Mechanics (Forces and Motion) areas of the various Physics A-level syllabuses.
I will cover all the content during the session, but if you want to prepare so you get the most out of the session, please do use the links and resources below.

See you all on Monday 12th December

Emma Austin

Topics covered:

- Projectile motion (motion in 2-dimensions)
- Moments and torques
- Newton's Laws of Motion (collisions, impulse, interaction pairs)
- Practical skills relating to this topic (measuring g, demonstrating conservation of momentum, investigating force and acceleration)

Resources:
All of these topics (except for projectile motion) are covered to different degrees in the GCSE specifications, so you should be reasonably familiar with all of them. The big difference at A-level is that we are expected to analyse situations which aren't just taking place in one direction.

This means that the skills of resolving and combining forces are vital in these topics. If you aren't yet confident that you can look at a free-body diagram and resolve the forces into their perpendicular components, then I recommend that you do some practice of this before the session.

Test Yourself:
www.isaacphysics.org
Again - this website is excellent for practising those core skills. Lots of repetition is the best way to really develop those neural connections and mean that you don't have to spend time working out what to do when you're in an exam situation!

Go to Learn - A-level Resources - A-level Physics lessons - Mechanics (Y12) and Materials

Then choose either B1(Components of a vector) or B2 (Adding vectors) and try the interactive questions.

Tip: When combining vectors, always draw a sketch diagram to help you see what is happening. This also allows you to estimate the direction of the resultant vector.

Physicsandmathstutor.com
If you want to remind yourself of the GCSE content on moments, momentum and Newton's Laws, then this website is a brilliant place to start.

https://www.physicsandmathstutor.com/physics-revision/

Search by your GCSE exam board and look for topics such as:

- Forces in Action
- Motion
- Moments
- Momentum
- Newton's Laws

Skim through the questions and look for the more tricky ones - not just simple calculations, but questions where you are required to describe and explain. Check your answers - are you using all the relevant scientific terms and concepts in your answers?

If there are topics here that you are not confident with - then use the various on-line resources available to you to fill the gaps. Try Science Shorts; PhysicsOnline or FreeSciencelessons - to refresh your memory of GCSE content.