

# Y12 Summer - Introduction to Engineering

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**The Focus:** In September you will be joining us here at the UTC. You will be coming to us from lots of different schools in the Sheffield City region, so as well as getting to know you and your interest in engineering, we are also going to have to find out what skills you have. In year 12 you will have four examined units and two assignment based units, both these assignment units will involve using CAD software.

Solidworks is the software that we use at the UTC in the CAD and Mechanical Design courses in Y12 engineering and in CAM and Mechanical Simulation in Y13.

Two of the four examined units in Y12 are Principals of Mechanical Engineering (PME) and Science for Engineers (SFE).

**What you can do:** You will be making a brand-new start and we know how eager you and we are to make the best start possible.

So before September:

**1.** Familiarise yourself with the basic functions of part modelling in Solidworks, such as creating sketches and using simple features such as extrusions, cut-extrudes, revolutions and fillet/chamfers. The following video links are beginner tutorials, once the basics have been practiced have a go at modelling various things around the home to develop your skills and understanding.

<https://www.youtube.com/watch?v=cy3ExIAcl2Y> (3 video series)

<https://www.youtube.com/watch?v=jJH8ZHq-SYc> (2 video series)

**Instructions on how to download and install Solidworks on your home PC, for Windows are also attached. Solidworks will not run on Macs without the use of mirror apps such as Bootcamp or Parallels to install Windows on.**

**2.** At the same time we have provided some video links that will support you for both PME and SFE;

<https://www.youtube.com/watch?v=LZMMH-GFO-k> (SI units)

<https://www.youtube.com/watch?v=7i7OIEJ-n5c> (SI units)

<https://www.youtube.com/watch?v=G4sRaYnnHm8> (Application of accuracy/precision: Lathe accuracy)

<https://www.youtube.com/watch?v=hRAFPdDppzs> (Accuracy and precision)

<https://www.youtube.com/channel/UCDWYbhR94ZYFUXd4NJvAHYQ> (Gorilla Physics channel which has lots of videos about preparing for A level Physics which will help for SFE)

## **Things to remember:**

- This is completely optional, and any work you create will only be marked if you submit it. It is just here to give you a starting point for engineering for the best possible start in September.
- If you like to make projects or design items in your own time bring in some images so we can see what you enjoy.

**Have fun and we'll see you in September - UTC Sheffield – Engineering Department**