



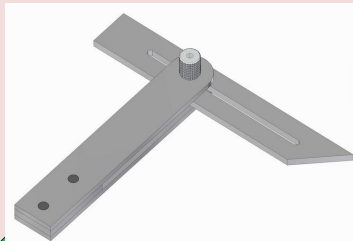
Overview:

Y10 is dedicated to understanding basic engineering principles and manufacturing one-off products using hand tools and machines – with an NEA that is worth 33% of your qualification.

Year 10 Engineering – taught in specialist technical workshops and ICT suites. A variety of theory and practical lessons are undertaken to develop the skills required of a manufacturing engineer. This includes learning how to read engineering drawings, plan safe procedures and manufacture components with precision.

Year 10

ENGINEERING (MANUFACTURE)



Term 3:

This term you will continue on the NEA with it be submitted toward the end of the

term for assessment.

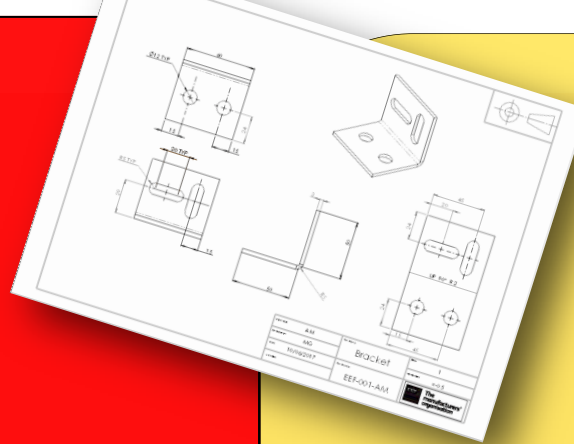


The term continues with developing a broad knowledge of manufacturing processes using a range of common engineering materials. A mock examination will test knowledge developed across Year 10.

An introduction to CAD will allow prepare students for Year 11 where Manufacturing in Quantity will become the focus



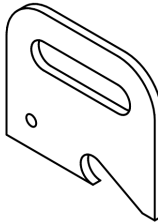
| Likelihood (L) | Severity/Consequence (S) | | | | |
|------------------|--------------------------|------------|------------|------------|-----------------|
| | Negligible 1 | Minor 2 | Moderate 3 | Major 4 | Catastrophic 5 |
| 5 Almost certain | Moderate 5 | High 10 | High 15 | Major 20 | Catastrophic 25 |
| 4 Likely | Moderate 4 | High 8 | High 12 | Major 16 | Catastrophic 20 |
| 3 Possible | Low 3 | Moderate 6 | High 9 | Major 12 | Catastrophic 15 |
| 2 Unlikely | Low 2 | Moderate 4 | High 6 | High 8 | Major 10 |
| 1 Rare | Low 1 | Low 2 | High 3 | Moderate 4 | High 5 |



Term 1:

Your year starts with understanding orthographic projection and being able to read engineering drawings. You will need to understand the how a 3D object is represented using a range of 2D drawings and the use of specific technical information, language and symbols.

Your first project will develop basic marking out and manufacturing skills using a range of hand tools. It will require students to gain an understanding of planning for efficient production in the workshop, whilst focussing on the need to work with precision and effective quality control checking at all stages of manufacture.



This second half of the term there is an increased focus on the theory of Engineering Principles to understand the materials and their properties used in manufacturing along with planning to follow detailed health and safety

The second project is to manufacture a sliding bevel that develops manual joining methods and focuses on a range of machining processes using the centre lathe and milling machine.

Homework will practise understanding and revise knowledge learnt in lessons through a range of activities.

Term 2:

Theory focuses on developing a knowledge of a wide range of workshop and industrial manufacturing processes using a range of common engineering materials. From simple processes such as thermoforming through to mass production methods of injection moulding and die casting.

During this term the 'Manufacturing a one-off product' NEA will be started. Working from an engineering drawing provided by the Exam board as part of the set assignment, a small product will need to be planned, risk assessed and then manufactured.

Homework will continue to practise and revise theory and practical knowledge

