

# SKILLSTART LEVEL 2 ENGINEERING

The Skillstart vocational training course offers an opportunity for a practical hands-on approach to engineering education. Through the completion of a series of carefully designed projects and underpinning knowledge worksheets, candidates can gain a Level 1 or a Level 2 National Vocational Qualification which makes a very good basis for continuance and progression into Level 2 specific or Level 3 general engineering qualifications. This qualification, if passed at Level 2, is worth 2 GCSE B grades.

The qualification and experiences, recognised by industry, are also a potential stepping stone to employment and a career in many technological fields, which could include; mechanical, electrical, construction, marine, agricultural and motor vehicle engineering as well as the medical industry.



Learners will gain specialist skills in the following areas:

**FITTING:** Students will learn to use hand tools and marking out tools to manufacture components with a high degree of accuracy.

**SHEET METALWORK:** Students will learn all the skills necessary to produce both simple and complex shapes in thin sheet metal.

**MECHANICAL ASSEMBLY:** Students will learn to correctly position and secure components using various mechanical fastening devices, tools and techniques. They will be taught to carry out visual and functional checks to confirm that the finished assembly meets the required standard.

## **Years 9, 10 & 11**

Learners will be assessed through a portfolio of evidence to demonstrate their subject knowledge in the following unit areas:

- Working safely in an engineering environment,
  - Working efficiently and effectively in engineering,
  - Using and communicating technical information,
  - Producing components using hand tools and fitting techniques,
  - Producing sheet metal components and assemblies.
- (Level 2 only) Undertaking mechanical assemblies.

# PRODUCT DESIGN

This WJEC GCSE in Design and Technology offers a unique opportunity in the curriculum for learners to identify and solve real problems by designing and making products.

The course consists of 2 units, both of equal weighting. Unit 1 is the 2 hour examination which will be on the specific topic of Product Design, this is not a tiered paper so all grades from A\*-G are accessible.

The examination will test the pupils knowledge and understanding of the design process, design history, commercial and industrial processes as well as their designing skills. There is a mixture of short to extended-writing questions to allow pupils of different abilities to access their potential.

The coursework consists of a 35 hour non-examination assessment, whereby the pupils can choose from the exam board provided design briefs.



Unit 2: The design and make element (non-examination assessment) consists of a portfolio approach where pupils will research a given brief, design and model (both physically and virtually) potential outcomes before realising/producing their final design in the suitable/mixed materials.

They will be assessed on skills, such as:

- Their ability to interpret and analyse the brief, to look at existing products and profile a target audience,
- Their level of creativity and innovation in generating creative and original solutions,
- Their expertise in their knowledge and understanding of materials in order to be able to select the most appropriate ones for the task.

Throughout the year, the work undertaken will inform their overall subject knowledge and pupils will also work through a revision guide and work book to build a bank of revision materials.

The first years of the course are spent undertaking smaller skill building tasks such as setting up and using machinery and tools independently as well as modelling and drawing for technical and presentation purposes.

We will also exploring the work of iconic designers and design styles through history and investigate new and smart materials as part of the GCSE specification.

The main product in Year 9 will be a design movement themed Clock, where they will be able to use the skills learned to design and make their own clock based on a design movement of their preference.

The main focus for Year 10 will be modelling, they will developing their ability to model in 3D materials and virtually using 3D software. Their main outcome will be an angle poise lamp.

## Year 11 .

Starting in September, pupils will select the brief of their choice and start their non-examination assessment to be completed by February half term. Then the remainder of the year is spent consolidating subject knowledge in preparation for the external examination in the summer term.