

DESIGN AND TECHNOLOGY: Materials Technology

COURSE DETAILS

AQA Technical Award – Materials Technology

AQA website for further details:

<http://www.aqa.org.uk/subjects/design-and-technology/technical-award/materials-technology-3740>

Technical Awards are practical, vocational qualifications available to 14-16 year olds to take alongside GCSEs. A single award (Level 2) will be equivalent to a GCSE qualification. The AQA Technical Award in Materials Technology is a modular qualification split into three units. One is an externally assessed exam, The other two are assessed internally by subject teachers. The course is designed for those who have a keen interest in materials and how to work with materials to get the best possible outcomes. It will enable students to develop a broad range of practical skills through mini-projects and one-off focussed tasks using various tools, equipment and processes in the workshop. Students will be expected to develop knowledge and understanding of the working properties of a broad range of materials including woods, metals and polymers (plastics). They will be required to use both traditional skills as well as modern technologies, applying technical and practical expertise to ensure a product is fit for purpose.

Internal assessments

Internal assessment will be broken down into three units:

Unit 1: Skills demonstration (30% of overall qualification)

Students will undertake a number of mini-projects that will allow them to demonstrate and be assessed against the twelve practical skills. Each skill will be worth up to six marks, allocated across three marking bands. Students will be able to take advantage of the vast range of equipment, machinery and CAD/CAM facilities available within the department, as well as staff expertise.

Tasks will be completed within approximately thirty-six guided learning hours under supervised conditions with skills covering the following:

- team working
- marking out
- cutting and shaping
- forming, bending and laminating
- casting and moulding
- quantity production
- the use of powered machinery
- heat and chemical treatment
- joining techniques (welding, soldering, wood joining, solvent welding)
- using CAD/CAM systems
- using finishing techniques
- quality control and maintaining accuracy.

Unit 2: Extended making project (30% of overall qualification)

Students will undertake an extended making project that showcases the skills they have developed in Unit 1 and the knowledge they have developed through Unit 3. Students will

produce a practical outcome in addition to a small portfolio to evidence the planning and development and testing and evaluation stages.

Marks will be awarded under four criteria:

- Planning and Development
- Making
- Testing and Evaluating
- Communication

The project will be completed within approximately thirty-six guided learning hours under supervised conditions. Tasks will be set by AQA. Examples include: design a children's toy using sustainable materials; design a piece of jewellery; design a storage solution. Following the release of the tasks by AQA, subject teachers will determine the best options for students at Caldew School based upon the facilities and resources available to ensure successful outcomes can be produced by all.

Unit 3: Fundamentals of materials technology (40% of overall qualification)

Students will be assessed on the knowledge and understanding of the following:

- Material and their working properties
- Processes and manufacture
- Joining, components, adhesives and finishes
- Product specification
- Commercial practice
- Careers opportunities

This is an externally assessed written examination of 1 hour 30 minutes, taken at the end of the course, where students will draw upon the knowledge, skills and understanding gained through studying all three units. The examination will be divided into two sections:

Section A – 20 multiple choice questions (20 marks)

Section B – A mixture of short answer and extended response questions (76 marks)

The award is an excellent progression for all students from Key Stage 3 Design and Technology at Caldew. The departmental is very well equipped to allow students to produce high quality practical outcomes. Those who have thrived within Design and Technology in Years 7-9 can look to the course as an opportunity to extend their knowledge and understanding of materials and their working properties, whilst acquiring a qualification in a subject they enjoy.

MISS A STRINGER