

KS4 Resistant Material

What will students learn/ what skills will they develop?

Year 10

Mini GCSE project – Theme: Sustainability / Desk tidy /

- Students develop knowledge of different techniques alternative industrial methods.
- Students develop understanding of advantages and disadvantages of different woods when manufacturing products.
- Students develop knowledge of joining.
- Students develop skills in carrying out the process of wood laminating, using adhesive and applying finish.
- Students develop knowledge of commercial products which have been heat treated.

What will students learn/ what skills will they develop?

Year 11

Theme: Edexcel set the theme for students to study: Lighting / Lockable storage / educational toy

- Students produce a final design proposal.
- Students produce a production plan.
- Students manufacture a product using several different components, a range of materials, equipment, techniques and processes.
- Students devise and carry out a range of suitable tests to check the performance and/or quality of the final product.
- Students evaluate their final product objectively with reference to specification points, user group feedback and sustainability issues.
- Students develop understanding of the difference between Thermoplastic and Thermosetting plastics.
- Students develop knowledge and understanding of using modern and smart materials.
- Students develop knowledge of manufacturing processes for batch production
- Students develop understanding of advantages and disadvantages of ICT in the design, development, marketing and sale of products.
- Students develop understanding the importance of minimising waste product.
- Students develop understanding of the responsibilities of countries in minimising the impact of industrialisation on global warming and climate change.

Assessment

The examination board is Edexcel.

60% course work / 40% exam – One hour and a half hour paper

All assessments relate to the assessment objectives within the GCSE mark scheme.

Individual pieces of work are formatively marked following the school's assessment policy to provide constant feedback and progression.

Students are expected to correct their own work and respond to teacher comments using the school assessment proforma.

SMSC

Resistant material draws on whole world

cultures and historically significant work.

Students develop their cultural awareness and understanding and they learn to appreciate the value of differences and similarities. Collaborative and cooperative work allows students to develop respect for the abilities of each other. Students also develop knowledge of the strategies, characteristics, applications and advantages and disadvantages of value issues when designing and manufacturing products.

Safety

A strong emphasis is placed on Health and Safety within the Department and safe practice is reinforced in every lesson. General safety rules are always rigorously enforced for the protection of the individual students and staff. Each teaching area also has its own special requirements and safety is continually taught through talks and demonstrations as and when required. Safety goggles, dust masks and gloves are provided when appropriate and instruction is given on their proper use.

Literacy

Students develop speaking and listening skills.

Students provide oral and written evaluation of their work.

The promotion of independent research and product design allow students to develop ideas in depth.

Reading enriches their subject knowledge and technical vocabulary.

Students use the correct technical language. Key terms are taught explicitly.

Numeracy

Students deal with measurement, symmetry, proportion, scale, shape.