



**Sir John Cass Red Coat School Programme of Study – Key Stage 4**  
**Subject: Resistant Materials/ GCSE D&T**

Year 10	Year 11
<p><b>Topics Covered/ Areas of Focus:</b></p> <p>Mini GCSE project – Theme: Sustainability / Desk tidy</p>	<p><b>Topics Covered/ Areas of Focus:</b></p> <p>Theme: Edexcel set the theme for students to study: Lighting / Lockable storage / educational toy</p>
<p><b>Skills Development &amp; Expected Progress:</b></p> <p>Students develop knowledge of different techniques alternative industrial methods.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Students develop understanding of advantages and disadvantages of different woods when manufacturing products.</li> <li><input type="checkbox"/> Students develop knowledge of joining.</li> <li><input type="checkbox"/> Students develop skills in carrying out the process of wood laminating, using adhesive and applying finish.</li> <li><input type="checkbox"/> Students develop knowledge of commercial products which have been heat treated.</li> </ul>	<p><b>Skills Development &amp; Expected Progress:</b></p> <p>Students produce a final design proposal.</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Students produce a production plan.</li> <li><input type="checkbox"/> Students manufacture a product using several different components, a range of materials, equipment, techniques and processes.</li> <li><input type="checkbox"/> Students devise and carry out a range of suitable tests to check the performance and/or quality of the final product.</li> <li><input type="checkbox"/> Students evaluate their final product objectively with reference to specification points, user group feedback and sustainability issues.</li> <li><input type="checkbox"/> Students develop understanding of the difference between Thermoplastic and Thermosetting plastics.</li> <li><input type="checkbox"/> Students develop knowledge and understanding of using modern and smart materials.</li> <li><input type="checkbox"/> Students develop knowledge of manufacturing processes for batch production</li> <li><input type="checkbox"/> Students develop understanding of advantages and disadvantages of ICT in the design, development, marketing and sale of products.</li> <li><input type="checkbox"/> Students develop understanding the importance of minimising waste product.</li> <li><input type="checkbox"/> Students develop understanding of the responsibilities of countries in minimising the impact of industrialisation on global warming and climate change.</li> </ul>
<p><b>Assessment:</b></p> <p>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.</p>	

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.

**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 consistently use Mathematics throughout the programme.  
 Students use measurements, conversation, percentages, calculating the cost of project including materials cost, graphs, symmetry, proportion, scale, shapes.

**ICT:**

CAD, CAM, using computers, electronic portfolios

**Life in Modern Britain:**

Health and safety regulations in UK  
 Rule of Law  
 BSI  
 Sustainability

**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.

**Meeting the needs of individual students & Additional Support:**

Differentiated learning, scaffolding/targeted questioning, one-2-one support, extension tasks, and technician support.

**Extra-Curricular Activities & Club:**

After school extension classes once a week and Saturday intervention classes.

**Independent Study/ Homework:**

Students continue with independent work on their major project and also revision for exam and practice exam papers.

**Resources for Learning Support and VLE:**

PowerPoints presentation, CAD, CAM work.