



# Marshalls Park Academy - Curriculum Overview

Subject: Design and Technology

Year Group: 10



Students will be following a 2 year scheme of work in order to be fully prepared for the examination in year 11 (worth 50% of their GCSE grade). There are interactive PowerPoint's available for teachers to adapt according to each class. Theory learning is also further reinforced by homework and end of unit assessments.

The majority of year 10 will focus on theoretical knowledge. Mini practical projects will be carried out throughout the year (2 projects lasting 8-10 lessons each). These projects will emphasise knowledge that will be taught within the theory lessons.

TERM 1	TERM 2	TERM 3
<p style="text-align: center;"><b>KNOWLEDGE/SKILLS</b></p> <ul style="list-style-type: none"> <li>• CAD CAM systems, robotics, automation, FMS, JIT</li> <li>• Recycle and repairing products</li> <li>• Energy generation. Energy storage.</li> <li>• Modern materials. Smart materials. Composite materials and technical textiles</li> <li>• Electronic systems &amp; systems diagrams</li> <li>• Mechanical devices</li> </ul> <p style="text-align: center;"><b>MINI PROJECT – ECO COUNCIL MOCK NEA</b></p> <ul style="list-style-type: none"> <li>• Ecological &amp; social footprint</li> <li>• The 6 R's</li> </ul>	<p style="text-align: center;"><b>KNOWLEDGE/SKILLS</b></p> <ul style="list-style-type: none"> <li>• Forces &amp; Stresses</li> <li>• Improving functionality</li> <li>• Scales of production</li> <li>• Papers &amp; Boards</li> <li>• Timbers</li> <li>• Metals and alloys</li> <li>• Polymers</li> <li>• Textiles</li> </ul> <p style="text-align: center;"><b>MINI PROJECT – PEWTER CASTING</b></p> <ul style="list-style-type: none"> <li>• CAD/CAM skills</li> <li>• Importance of PPE for health &amp; safety</li> <li>• Surface treatments and finishes</li> </ul>	<p style="text-align: center;"><b>KNOWLEDGE/SKILLS</b></p> <ul style="list-style-type: none"> <li>• Specialist Technical principles</li> <li>• Specialist tools</li> <li>• Investigation, primary and secondary data</li> <li>• The work of others (designers and companies)</li> <li>• Design strategies</li> <li>• Communication of design ideas</li> <li>• Selection of materials and components</li> <li>• Tolerances and allowances</li> <li>• Material management</li> <li>• Surface treatments and finishes</li> <li>• Start of controlled assessment</li> </ul>



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KEY ASSESSMENTS	KEY ASSESSMENTS	KEY ASSESSMENTS
<p>HALF TERM 1 End of unit test</p> <p>HALF TERM 2 Mini Non Exam Assessment (will form half of their PPE grade)</p>	<p>HALF TERM 1 End of unit test</p> <p>HALF TERM 2 Metal practical End of unit test</p>	<p>HALF TERM 1 End of unit test</p> <p>HALF TERM 2 Start of controlled assessment</p>

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Extended reading suggestions and links to external resources:

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