



**GCSE Design & Technology: Y11 Spring Term 1**

**We will be learning about...**

During this unit you will be learning how to apply your research and understand of user needs and wants alongside your design specification to create designs, models and CAD proposals. You will be planning and selecting appropriate tools and equipment to manufacture a prototype or scale model to present your solution.

**We will develop our learning by studying the following each week:**

Week Number	Lesson Content and assessment	Homework
<b><u>Week 1</u></b>	<ul style="list-style-type: none"> <li>User constraints and interpretation of data</li> <li>Quick idea generation to solve or address user problem</li> <li>Annotation which makes clear links to communicate choices</li> </ul>	<ul style="list-style-type: none"> <li>Additional research specific to project</li> </ul>
<b><u>Week 2</u></b>	<ul style="list-style-type: none"> <li>Review of design ideas through rankings</li> <li>Prioritising design proposal through feedback and development</li> <li>CAD development of initial ideas</li> </ul>	<ul style="list-style-type: none"> <li>Material types for manufacture</li> </ul>
<b><u>Week 3</u></b>	<ul style="list-style-type: none"> <li>Iterative design, combining sketches, CAD and physical modelling</li> <li>How to identify and development to prototype</li> <li>Appropriate sizing and scale with appropriate material choice</li> </ul>	<ul style="list-style-type: none"> <li>Research planning and GANTT Charts</li> </ul>
<b><u>Week 4</u></b>	<ul style="list-style-type: none"> <li>Safe working practices</li> <li>Marking and preparation of material</li> <li>Manufacture with general workshop tooling</li> </ul>	<ul style="list-style-type: none"> <li>Working properties and performance characteristics of materials</li> </ul>
<b><u>Week 5</u></b>	<ul style="list-style-type: none"> <li>Marking and preparation of material for further components</li> <li>Manufacture with workshop specific tooling</li> <li>Evidence of manufacture working log</li> <li>Core material choices and properties</li> </ul>	<ul style="list-style-type: none"> <li>Design communication techniques and application</li> </ul>
<b><u>Week 6</u></b>	<ul style="list-style-type: none"> <li>Manufacturing processes of prototype</li> <li>Assembly techniques</li> <li>Joining methods</li> <li>Social and moral considerations of material choices</li> </ul>	<ul style="list-style-type: none"> <li>Design influences of past and present designers</li> </ul>

**By the end of the topic we will be able to:**

**Remember** how to utilise a brief and specification to create a design sketch

**Understand** how to generate a design proposal is about meeting a users problem and need whilst working to constraints and feasibility

**Apply** knowledge and understanding of design, CAD and modelling to be able to arrive at a design solution

**Create** a range of considered design proposals and plan for a prototype to manufacture into a 3d project in a variety of materials

**Key Vocabulary**

feasibility	constraint	proposal	workplane	chuck	tolerance	fanuc
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