



# Curriculum Overview: Design Technology & Engineering

Exam Board: OCR

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
7	<b>Perspective</b> <ul style="list-style-type: none"> <li>○ Vanishing point</li> <li>○ Perspective lettering</li> <li>○ 3D shapes</li> <li>○ Isometric drawings</li> <li>○ Rendering &amp; adding colour</li> </ul>	<b>Perspective</b> <ul style="list-style-type: none"> <li>○ Overlapping isometric shapes</li> <li>○ Food packaging research</li> <li>○ 3D drawing</li> <li>○ Real life application</li> <li>○ Designing food packaging</li> <li>○ Summative assessment</li> <li>○ Evaluation</li> </ul>	<b>Bug Box</b> <ul style="list-style-type: none"> <li>○ Design brief</li> <li>○ Research &amp; design</li> <li>○ Mood boards</li> <li>○ Design Specification</li> <li>○ Marking accurately</li> <li>○ Practical cutting</li> </ul>	<b>Bug Box</b> <ul style="list-style-type: none"> <li>○ Quality checks</li> <li>○ Belt sanding</li> <li>○ Gluing &amp; assembly</li> <li>○ Summative assessment</li> <li>○ Photography</li> <li>○ Evaluation</li> </ul>	<b>Keyring</b> <ul style="list-style-type: none"> <li>○ Marking out &amp; tools</li> <li>○ Tolerance</li> <li>○ Metals &amp; their uses</li> <li>○ Measuring accurately</li> <li>○ Pillar drill</li> <li>○ Metal lathe</li> </ul>	<b>Keyring</b> <ul style="list-style-type: none"> <li>○ Milling machine uses</li> <li>○ CNC machining</li> <li>○ Plan of making</li> <li>○ Practical with metal</li> <li>○ Summative assessment</li> <li>○ Photography</li> <li>○ Evaluation</li> </ul>
8	<b>Cable Wrap</b> <ul style="list-style-type: none"> <li>○ Analysing a design problem</li> <li>○ Design to a theme</li> <li>○ Product research</li> <li>○ Design sheet &amp; layout</li> <li>○ Developing 3D styles</li> <li>○ Design sheets</li> </ul>	<b>Cable Wrap</b> <ul style="list-style-type: none"> <li>○ Final design &amp; annotation</li> <li>○ Creating a prototype</li> <li>○ CAD 2D design software</li> <li>○ Laser cut final design</li> <li>○ Product Photography</li> <li>○ Evaluation</li> </ul>	<b>Desk Tidy</b> <ul style="list-style-type: none"> <li>○ What's the problem?</li> <li>○ Research &amp; mind map</li> <li>○ Categories of wood</li> <li>○ Design sheets</li> <li>○ Practical part 1 (back)</li> <li>○ Practical part 2 (body)</li> </ul>	<b>Desk Tidy</b> <ul style="list-style-type: none"> <li>○ Assembly of product – base)</li> <li>○ Quality checking</li> <li>○ Tool diary</li> <li>○ Product Photography</li> <li>○ Evaluation</li> </ul>	<b>Metal Sculpture</b> <ul style="list-style-type: none"> <li>○ Engineering careers</li> <li>○ Project introduction</li> <li>○ Design sheets</li> <li>○ Metals &amp; their uses</li> <li>○ Metal alloys</li> <li>○ Practical – marking out</li> <li>○ Cutting out</li> </ul>	<b>Metal Sculpture</b> <ul style="list-style-type: none"> <li>○ Steel &amp; stainless-steel uses</li> <li>○ Gold uses</li> <li>○ Practical – filing metal</li> <li>○ Creating metal feet</li> <li>○ Brazing</li> <li>○ Product Photography</li> <li>○ Evaluation</li> </ul>
9	<b>Natural Forms</b> <ul style="list-style-type: none"> <li>○ Define nature &amp; research</li> <li>○ Research – planning &amp; Haeckel</li> <li>○ Inspiration v copying</li> <li>○ Geometric &amp; organic patterns</li> <li>○ Pattern design creation#</li> <li>○ Experimenting with design</li> </ul>	<b>Natural Forms</b> <ul style="list-style-type: none"> <li>○ Pattern development</li> <li>○ Final design &amp; annotation</li> <li>○ Self &amp; peer reflection of design</li> <li>○ Card prototype</li> <li>○ CAD final design &amp; making</li> <li>○ Product Photography</li> <li>○ Evaluation</li> </ul>	<b>Mood Light</b> <ul style="list-style-type: none"> <li>○ Understanding a specification – designing for a customer</li> <li>○ Soldering techniques</li> <li>○ Developing design</li> <li>○ Innovation v invention</li> <li>○ Intro to vacuum forming</li> <li>○ Creating wooden mould</li> </ul>	<b>Mood Light</b> <ul style="list-style-type: none"> <li>○ Understanding MDF</li> <li>○ High impact polystyrene</li> <li>○ Using texture in design</li> <li>○ Create vacuum formed shell</li> <li>○ Assembling circuit &amp; switch</li> <li>○ Product Photography</li> <li>○ Evaluation</li> </ul>	<b>Tap Wrench</b> <ul style="list-style-type: none"> <li>○ Recall – engineering experience and knowledge</li> <li>○ Glossary of terms &amp; drawings</li> <li>○ Accuracy &amp; tolerance</li> <li>○ Marking out &amp; tapping</li> <li>○ Cutting metal &amp; brazing</li> <li>○ Grinding &amp; polishing</li> </ul>	<b>Tap Wrench</b> <ul style="list-style-type: none"> <li>○ Engineering drawings</li> <li>○ Understanding manufacturing</li> <li>○ Lathe &amp; milling machine</li> <li>○ Plan of making</li> <li>○ Threading holes</li> <li>○ Product Photography</li> <li>○ Evaluation</li> </ul>
10	<b>Intro to GCSE Engineering</b> <ul style="list-style-type: none"> <li>○ Intro to manufacture specification</li> <li>○ Reading engineering drawings</li> <li>○ Risk assessment in the workshop</li> <li>○ Practical engineering drawing</li> <li>○ Into to coursework R015</li> </ul>	<b>Intro to GCSE Engineering</b> <ul style="list-style-type: none"> <li>○ Label engineering drawing</li> <li>○ Engineering materials (categories, properties &amp; testing)</li> <li>○ Marking out on materials</li> <li>○ Plan of making</li> </ul>	<b>Materials &amp; Properties</b> <ul style="list-style-type: none"> <li>○ Manufacturing processes (wasting)</li> <li>○ Turning &amp; milling</li> <li>○ Marking out</li> <li>○ Photography</li> <li>○ Machining @ Dudley College</li> </ul>	<b>Materials &amp; Properties</b> <ul style="list-style-type: none"> <li>○ Manufacturing processes (finishing, joining)</li> <li>○ Drilling, bending &amp; threading</li> <li>○ Assembly</li> <li>○ Photographs</li> <li>○ Hand in R015</li> </ul>	<b>Processes</b> <ul style="list-style-type: none"> <li>○ Manufacturing processes (shaping, injection moulding, casting)</li> <li>○ 3 x skills tests</li> <li>○ Final touches and rework off R015 if required</li> </ul>	<b>Processes</b> <ul style="list-style-type: none"> <li>○ Manufactured processes (forming, pressing, forging)</li> <li>○ 3 x skills tests</li> <li>○ Mock exam revision</li> <li>○ Mock exam</li> </ul>
11	<b>Manufacturing</b> <ul style="list-style-type: none"> <li>○ Scale of manufacture</li> <li>○ Robotic, automation, CNC</li> <li>○ CAD software</li> <li>○ 2D Design on shape</li> <li>○ Introduction to R016</li> <li>○ Engineering drawing</li> <li>○ Making templates</li> </ul>	<b>Programming</b> <ul style="list-style-type: none"> <li>○ Quality control</li> <li>○ CAD &amp; Programming</li> <li>○ Post processing</li> <li>○ G Code</li> <li>○ Plan of making</li> </ul>	<b>Globalisation</b> <ul style="list-style-type: none"> <li>○ Inventory management</li> <li>○ Lean manufacturing</li> <li>○ Operating laser cutter using CNC &amp; 3D printer</li> <li>○ Evidence of CAD photos</li> <li>○ Evidence of making photos</li> </ul>	<b>Globalisation</b> <ul style="list-style-type: none"> <li>○ Globalising &amp; digital technology</li> <li>○ Using templates (accuracy &amp; tolerance)</li> <li>○ Quality control photos</li> <li>○ R016 hand in coursework</li> </ul>	<b>Exam Prep &amp; Exam</b> <ul style="list-style-type: none"> <li>○ Final exam revision</li> <li>○ Final touches and rework of R016 if required</li> </ul>	-  ○ NA