

Year	Autumn	Spring	Summer
7	<p><b>Polymer: Initial Keyring</b></p> <p><b>Drawing strategies</b></p> <ul style="list-style-type: none"> <li>• Grid method</li> <li>• Construction lines</li> <li>• Rendering (plastic material and tone and shading)</li> <li>• Cabinet oblique</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• Using CAD software</li> <li>• Assembling keyring</li> </ul>	<p><b>Polymer: Initial Keyring</b></p> <p><b>Drawing strategies</b></p> <ul style="list-style-type: none"> <li>• Grid method</li> <li>• Construction lines</li> <li>• Rendering (plastic material and tone and shading)</li> <li>• Cabinet oblique</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• Using CAD software</li> <li>• Assembling keyring</li> </ul> <p><b>Drawing strategies</b></p> <ul style="list-style-type: none"> <li>• Isometric drawing</li> <li>• Colour, Tone &amp; Textures (focus on timber)</li> <li>• Exploded drawing of block bots and rendered (exploded drawing on google sketch up if computer access is available)</li> </ul>	<p><b>Drawing strategies</b></p> <ul style="list-style-type: none"> <li>• Isometric drawing</li> <li>• Colour, Tone &amp; Textures (focus on timber)</li> <li>• Exploded drawing of block bots and rendered (exploded drawing on google sketch up if computer access is available)</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• Marking and measuring with accuracy</li> <li>• Use of handheld equipment (tennon saw)</li> <li>• Use of machinery (sanders and pillar drills)</li> </ul>

		<b>Practical focus</b> <ul style="list-style-type: none"> <li>• Marking and measuring with accuracy</li> <li>• Use of handheld equipment (tennon saw)</li> <li>• Use of machinery (sanders and pillar drills)</li> </ul>	
8	<b>Timber &amp; Polymers:</b> Phone Holder (graffiti themed)  <b>Design strategies</b> <ul style="list-style-type: none"> <li>• Isometric joint</li> <li>• Exploded Drawings joint</li> <li>• Orthographic drawing of joint by hand</li> <li>• extension use CAD software to generate computerised version of orthographic drawing of joint</li> </ul> <b>Practical</b> <ul style="list-style-type: none"> <li>• Marking and measuring with accuracy</li> </ul>	<b>Timber &amp; Polymers:</b> Phone Holder (graffiti themed)  <b>Design strategies</b> <ul style="list-style-type: none"> <li>• Isometric joint</li> <li>• Exploded Drawings joint</li> <li>• Orthographic drawing of joint by hand</li> <li>• extension use CAD software to generate computerised version of orthographic drawing of joint</li> </ul> <b>Practical</b> <ul style="list-style-type: none"> <li>• Marking and measuring with accuracy</li> </ul>	<b>SMART materials:</b> Polymorph Key Ring  <b>Design strategies</b> <ul style="list-style-type: none"> <li>• Thumbnail sketches</li> <li>• One point perceptive</li> <li>• Modelling (playdough)</li> </ul> <b>Practical</b> <ul style="list-style-type: none"> <li>• Using SMART materials</li> <li>• Testing and evaluating models</li> <li>• Filing and shaping (handheld tools)</li> </ul>

	<ul style="list-style-type: none"> <li>• Use of handheld equipment to create <b>Half-Lap Joint</b> (tennon saw, chisel and file)</li> <li>• Line bending</li> <li>• Using CAD software to generate design for polymer</li> </ul>	<ul style="list-style-type: none"> <li>• Use of handheld equipment to create <b>Half-Lap Joint</b> (tennon saw, chisel and file)</li> <li>• Line bending</li> <li>• Using CAD software to generate design for polymer</li> </ul> <p><b>SMART materials:</b> Polymorph Key Ring</p> <p><b>Design strategies</b></p> <ul style="list-style-type: none"> <li>• Thumbnail sketches</li> <li>• One point perspective</li> <li>• Modelling (playdough)</li> </ul> <p><b>Practical</b></p> <ul style="list-style-type: none"> <li>• Using SMART materials</li> <li>• Testing and evaluating models</li> <li>• Filing and shaping (handheld tools)</li> </ul>	
9	<p><b>Timber and Polymers:</b> Sweet Dispenser</p> <p><b>Design Strategies</b></p>	<p><b>Timber and Polymers:</b> Sweet Dispenser</p> <p><b>Design Strategies</b></p> <ul style="list-style-type: none"> <li>• Isometric sweet dispenser (3D)</li> <li>• 3<sup>rd</sup> angle orthographic drawing (2D)</li> </ul>	<p><b>Metals: Designer</b> Influences Pewter Keyring</p> <p><b>Design Strategies</b></p>

	<ul style="list-style-type: none"> <li>• Isometric sweet dispenser (3D)</li> <li>• 3<sup>rd</sup> angle orthographic drawing (2D)</li> <li>• Free hand sketches of designs for polymer front</li> <li>• 2 point perceptive</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• Marking and measuring with accuracy</li> <li>• User of handheld equipment (coping/tennon saws and files)</li> <li>• Use of machinery (pillar drill, belt and disc sander)</li> <li>• Use of laser cutter for design</li> </ul>	<ul style="list-style-type: none"> <li>• Free hand sketches of designs for polymer front</li> <li>• 2 point perceptive</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• Marking and measuring with accuracy</li> <li>• User of handheld equipment (coping/tennon saws and files)</li> <li>• Use of machinery (pillar drill, belt and disc sander)</li> <li>• Use of laser cutter for design</li> </ul> <p><b>Metals: Designer_Influences Pewter Keyring</b></p> <p><b>Design Strategies</b></p> <ul style="list-style-type: none"> <li>• Brief and specification (<b>ACCESS FM</b>)</li> <li>• Thumb nail sketches</li> <li>• Use of goggle sketch up to generate 3D model</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• CAD CAM</li> <li>• Casting Metal – Jigs and templates</li> <li>• Cutting, Filing and Abrading Metal</li> </ul>	<ul style="list-style-type: none"> <li>• Brief and specification (<b>ACCESS FM</b>)</li> <li>• Thumb nail sketches</li> <li>• Use of goggle sketch up to generate 3D model</li> </ul> <p><b>Practical focus</b></p> <ul style="list-style-type: none"> <li>• CAD CAM</li> <li>• Casting Metal – Jigs and templates</li> <li>• Cutting, Filing and Abrading Metal</li> </ul>
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10- Engineering	<b>Engineering-</b> <ul style="list-style-type: none"> <li>•Design Strategies</li> <li>•Iterative Design Process</li> <li>•Interpreting a Design Brief</li> <li>•Research</li> <li>•Product Analysis</li> <li>•Design Specifications</li> <li>•Design Ideas</li> <li>•CAD (Google SketchUp)</li> <li>•3rd Angle Orthographic Drawing</li> <li>•Isometric and Exploded Drawing</li> <li>•3D Modelling</li> </ul>	<b>Engineering-</b> <ul style="list-style-type: none"> <li>•Design Specification</li> <li>•Scale of Manufacture</li> <li>•Manufacturing Processes</li> <li>•Shaping, Joining, Forming &amp; Finishing</li> <li>•Production Costs</li> <li>•Product Analysis</li> <li>•Product Disassembly</li> <li>•Components &amp; Materials</li> <li>•Virtual Modelling</li> <li>•Production Plan</li> <li>•Making a Prototype</li> <li>•Evaluation Against Specification</li> </ul>	<b>Engineering-</b> <ul style="list-style-type: none"> <li>• Engineering Drawings – Oblique, Block Diagrams, Flowcharts, Circuit Diagrams, Isometric, Orthographic.</li> <li>• Working Drawings</li> <li>• CAD Drawings</li> <li>• Live Brief Announced.</li> </ul>
10- Design and Technology	<b>Design Technology-</b>  New and emerging technologies- <ul style="list-style-type: none"> <li>• Enterprise</li> <li>• Market pull/Tech push</li> <li>• Fashions and trends</li> <li>• Automation, FMS, JIT</li> <li>• Planned Obsolescence.</li> </ul> Mechanisms and Systems- <ul style="list-style-type: none"> <li>• Motion</li> </ul>	<b>Design Technology-</b>  Designing and Making Principles- <ul style="list-style-type: none"> <li>•Primary and Secondary Research</li> <li>•Product Analysis (ACCESSFM)</li> <li>•Writing a Design Brief and Specification</li> <li>•Design Ideas</li> <li>•Polymer Theory</li> <li>•CAD CAM (2D Design &amp; Laser Cutter)</li> <li>•Card Modelling</li> </ul>	<b>Design Technology-</b> Designing and Making Principles- <ul style="list-style-type: none"> <li>• Electronics Theory</li> <li>• Industrial Processes</li> <li>• Practical Workshop Skills</li> <li>• Live NEA Brief</li> </ul>

	<ul style="list-style-type: none"> <li>• Linkages</li> <li>• Gear ratio</li> <li>• Programmable components</li> <li>• Material Properties and Environmental Impact</li> <li>• Timbers</li> <li>• Polymers</li> <li>• Metal</li> <li>• Practical Workshop Skills Storage Box</li> </ul>	<ul style="list-style-type: none"> <li>• 3rd Angle Orthographic Drawing</li> <li>• Practical Workshop Skills Storage Box</li> </ul> Project – CAD CAM Lid	
11- Engineering	<b>Engineering-</b> R039 – Communicating Designs- <ul style="list-style-type: none"> <li>• 2D &amp; 3D Sketching</li> <li>• Oblique, Isometric, Exploded and 3rd Angle Orthographic Drawing</li> <li>• CAD Drawing (Google Sketch Up)</li> <li>• Design Development</li> </ul>	<b>Engineering-</b> R040 – Design, Evaluation, Modelling- <ul style="list-style-type: none"> <li>• Product Analysis</li> <li>• 3D Modelling</li> <li>• Making a Prototype</li> <li>• Evaluation</li> </ul>	<b>Engineering-</b>  Exam Preparation.
11- Design and Technology	<b>Design Technology-</b>  NEA- <ul style="list-style-type: none"> <li>• Investigating Context</li> <li>• Primary &amp; Secondary Research</li> <li>• Producing a Design Brief and Specification</li> <li>• Generating Design Ideas</li> </ul>	<b>Design Technology-</b>  NEA- <ul style="list-style-type: none"> <li>• Developing Design Ideas</li> <li>• Making a Prototype</li> <li>• Analysing and Evaluating Against Specification</li> </ul>	<b>Design Technology-</b>  Exam Preparation.

	•3D Modelling		
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## Curriculum overview – Design and Technology- Easington.