

**MATERIALS: D&T DEPARTMENT CURRICULUM MAP 2022-2023**

| Year 7 (One term)   |   | Year 8 (One term)   |  | Year 9 (7 weeks)  |   |
|---|---|---|--|---|---|
| THEORY  | PRACTICAL SKILLS  | THEORY  | PRACTICAL SKILLS   | THEORY  | PRACTICAL SKILLS  |
| <p><b>Knowledge &amp; Understanding</b><br/>How trees are turned into timber<br/>Wood grain and knots<br/>Screw types &amp; pilot holes<br/>Interference and clearance holes<br/>Workshop tools and machines<br/>Go/no go gauges<br/>Types of motion<br/>Adhesives (PVA Vs hot melt glue)<br/>Writing a specification</p> <p><b>Researching</b><br/>Techniques including primary and secondary sources, naming sources, analysis and application of new knowledge and understanding to solving design problems.</p> <p>Use of a mood-board to inspire creative designing</p> <p><b>Design development</b><br/>Annotating designs<br/>Card modelling</p> | <p><b>Whirlygig Mechanisms Project</b></p> <p><b>Health and Safety</b><br/>General workshop<br/>Pillar &amp; cordless Drill<br/>Hand Saws</p> <p>Reading engineering drawings<br/>Make the Pivot (marking out: try square, marking gauge, steel rule, construction lines, hatching; cutting: tenon saw, coping saw, pillar drill, cordless drill, selecting drill bits)<br/>Make the main strut (as above plus countersink, screws)<br/>Make base and crank holder<br/>Make pivot bar (threading, use of dies, cutting compound)<br/>Make seesaw (drilling)<br/>Make crank (threading, bending)<br/>Make propeller<br/>Creative design &amp; make (could include 2d Design &amp; laser cutting)</p> | <p><b>Knowledge &amp; Understanding</b><br/>Man-made materials<br/>Templates<br/>Machine screw types (M3)<br/>Nut types<br/>Friction &amp; washers<br/>Workshop tools and machines including shears and hole punching aluminium.<br/>Basic soldering and principles of a simple circuit<br/>Writing a specification<br/>Product lifecycles<br/>Gearing<br/>Isometric drawing</p> <p><b>Researching</b><br/>Revisit from year 7 SoW</p> <p>Use of a mood-board<br/>Revisit from year 7 SoW</p> <p><b>Design development</b><br/>Annotating designs<br/>Styrofoam modelling</p> | <p><b>Electric Vehicle Project</b></p> <p><b>Health and Safety</b><br/>General workshop<br/>Pillar &amp; cordless Drill<br/>Hand Saws, sandpaper types<br/>Metalwork – shears and hole punch<br/>Strip heater – line bending</p> <p>Reading engineering drawings<br/>Using templates<br/>Expanded PVC - Make the base, legs &amp; link arms (templates, coping saw, pillar drill, cordless drill, selecting drill bits, sanding – quality of finish)<br/>Aluminium - Make the bracket (templates, shearing, filing, emery cloth, punching)<br/>Motors, gears &amp; pulleys<br/>Soldering – switch<br/>Assembly – problem solving</p> <p>Creative design &amp; make (could include 2d Design &amp; laser cutting)</p> | <p><b>Knowledge &amp; Understanding</b><br/>Soldering and Desoldering<br/>Bridging, short and open circuits, component recognition and orientation, stripboard vs PCB, circuit testing and problem solving (assisted).<br/>Recycling and upcycling</p> <p><b>Researching</b><br/>Revisit from year 7 SoW</p> <p><b>Design development</b><br/>Annotating designs<br/>Card modelling to produce templates.</p> | <p><b>MP3 Amplified speaker Project</b></p> <p>Health and Safety<br/>General workshop<br/>Soldering irons<br/>Working with recycled materials (including sheet metals &amp; polymers)</p> <p>Following step-by-step instructions<br/>Quality control checks</p> |
| <p>Link to GCSE:<br/>H&amp;S, types of motion both typical exam questions. Research and analysis needed for NEA.</p>  | <p>Link to GCSE:<br/>Marking out, knowledge of technical terms, manufacturing processes including cutting, shaping, joining, finishing and Quality Assurance and Quality Control required for NEA and exam.</p>   | <p>Link to GCSE:<br/>H&amp;S, types of motion (reinforce learning), Materials &amp; their properties, production techniques, biomimicry, gearing, All typical exam questions. Research and analysis needed for NEA.</p>   | <p>Link to GCSE:<br/>Use of templates to improve quality, accuracy and speed of manufacture, modelling techniques, assembly – more parts, harder to make, assemble and problem solve. Development part of NEA.</p>   | <p>Link to GCSE:<br/>H&amp;S, Soldering, basic electronics, Materials &amp; their properties, production techniques, biomimicry, gearing, All typical exam questions. Research and analysis needed for NEA.</p>   | <p>Link to GCSE:<br/>Upcycling and use of recycled materials.<br/>Soldering<br/>Metalwork techniques</p>  |
| <p><b>ASSESSMENT</b><br/>Assessed on the cover of the booklets – 8 common assessment criteria</p>   | <p><b>ASSESSMENT</b><br/>Verbal feedback to correct technique. Overall assessment on the cover of the booklets (planning and making)</p>  | <p><b>ASSESSMENT</b><br/>Assessed on the cover of the booklets – 8 common assessment criteria</p>   | <p><b>ASSESSMENT</b><br/>Verbal feedback to correct technique. Overall assessment on the cover of the booklets (planning and making)</p>   | <p><b>ASSESSMENT</b><br/>Assessed on the cover of the booklets – 8 common assessment criteria</p>   | <p><b>ASSESSMENT</b><br/>Verbal feedback to correct technique. Overall assessment on the cover of the booklets (planning and making)</p>  |