

| Year 8 Technology Mid-Term Plan<br>(1 x 75 min lesson per 2 weeks = 18 lessons) |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                   |
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|                                                                                 | Autumn 1/Spring 2                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | Autumn 2/Summer 1 | Spring 1/Summer 2 | Spring 2/Autumn 1                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | Summer 1/Autumn 2 | Summer 2/Spring 1 |
| Topic                                                                           | Keyring Project (9 x 75 mins)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                   | Mood Light Project (9 x 75mins)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                   |                   |
| Project Learning Goal                                                           | Be able to understand working properties of metal and plastic and the tools/methods used to shape the materials.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                   |                   | Be able to respond effectively to a Design Brief by using relevant research and design methods, including CAD/CAM, to produce an electronic mood light.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                   |                   |
| Big Ideas                                                                       | <ul style="list-style-type: none"> <li>Master Metalworking Skills</li> <li>Master Metal and Plastic Knowledge</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                   |                   | <ul style="list-style-type: none"> <li>Master Design Skills including CAD/CAM</li> <li>Master Practical Skills including Soldering</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                   |                   |
| Key Knowledge                                                                   | <ul style="list-style-type: none"> <li>Understand how to work with metals and plastics using a range of relevant tools and processes, alongside knowledge development of these materials and working properties.</li> <li>Understand workshop health &amp; safety, and safe and proper use of tools and equipment.</li> <li>Understand project requirements/aims, and evaluation of outcomes.</li> </ul>                                                                                                                                                                                                                                                               |                   |                   | <ul style="list-style-type: none"> <li>Understand how to create electronic circuits using a range of relevant tools and processes, alongside knowledge development of electronics and components.</li> <li>Understand workshop health &amp; safety, and safe and proper use of tools and equipment.</li> <li>Understand how to solder, use CAD/CAM, and use the strip heater.</li> </ul>                                                                                                                                                                                                                                                                                                             |                   |                   |
| Key Vocabulary                                                                  | Scriber, Steel Rule, Engineers Square, Flat Safety File, Odd-leg Calipers, Centre Punch, Ball-pein Hammer, Dividers, Hacksaw, Coping Saw, Pillar Drill, Wet & Dry Paper, Wire Wool, Letter Punch. Ferrous, Non-ferrous, Alloy, Corrosion, Strong, Tough, Hard, Malleable, Ductile, Elastic, Engineering Drawing, Thermoforming Plastic, Thermosetting Plastic.                                                                                                                                                                                                                                                                                                         |                   |                   | Design Process, Design Brief, Primary Research, Secondary Research, Target Market, Mood Board, Existing Product Analysis, Design Specification/Success Criteria, Design Ideas, Final Design Intention, Strip Heater, Thermoforming Plastic, Thermosetting Plastic, CAD and CAM (Computer Aided Design/Manufacture).                                                                                                                                                                                                                                                                                                                                                                                  |                   |                   |
| Topic Relevance                                                                 | These skills support KS3 pupils in developing confidence with materials and processes in design and technology. Learning to work with metals and plastics introduces them to material properties, shaping techniques, and relevant tools, expanding their practical knowledge. Workshop health & safety ensures responsible tool use, promoting a safe working environment. Understanding project requirements and evaluating outcomes strengthens problem-solving and critical thinking, helping pupils refine designs and improve functionality. Together, these skills build a strong foundation for more advanced making, innovation, and technical understanding. |                   |                   | These skills help KS3 pupils develop technical confidence in design and technology. Learning to <b>create electronic circuits</b> builds problem-solving and innovation, while exploring <b>electronics and components</b> deepens knowledge in this area. <b>Workshop health &amp; safety</b> ensures safe and responsible tool use, preparing pupils for practical work environments. Mastering <b>soldering, CAD/CAM, and the strip heater</b> strengthens precision, digital design skills, and material manipulation, laying the foundation for advanced engineering and creative projects. These skills introduce concepts in preparation for KS4 GCSE Art & Design: Three-Dimensional Design. |                   |                   |
| Assessment                                                                      | Do It Now/Exit Tickets, Low-stakes quiz (Knowledge Check) (week 4-5) Practical Evaluation, Key assessment at the end of project (week 8-9).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                   |                   | Do It Now/Exit Tickets, Low-stakes quiz (Knowledge Check) (week 4-5) Practical Evaluation, Key assessment at the end of project (week 8-9).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                   |                   |
| Practical Skills Mastery                                                        | <ul style="list-style-type: none"> <li>Be able to choose and use a variety of metalworking tools accurately, demonstrating independence and confidence when working.</li> <li>Be able to consider precision when shaping and finishing the keyring, resulting in a high-quality outcome.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                    |                   |                   | <ul style="list-style-type: none"> <li>Be able to produce a high-quality, original concept mood light design.</li> <li>Be able to use CAD/CAM effectively when realising a design idea.</li> <li>Be able to consider accuracy and precision when manufacturing all aspects of the product, resulting in a high-quality outcome.</li> </ul>                                                                                                                                                                                                                                                                                                                                                           |                   |                   |
| Theoretical Knowledge Mastery                                                   | <ul style="list-style-type: none"> <li>Be able to explain the difference between ferrous and non-ferrous metals, giving examples of each,</li> <li>Be able to explain what an alloy is and give a range of examples.</li> <li>Be able to explain what is meant by the term working properties, giving examples.</li> <li>Be able to identify and explain the use of metalworking tools.</li> </ul>                                                                                                                                                                                                                                                                     |                   |                   | <ul style="list-style-type: none"> <li>Be able to use a Design Process effectively to inform new design concepts.</li> <li>Be able to make conclusions from research, explaining how it can be used when developing designs and when making.</li> <li>Be able to explain the difference between thermoforming/setting plastics and give examples.</li> <li>Be able to understand and explain the application of CAD/CAM in Design &amp; Technology.</li> <li>Be able to produce a detailed evaluation.</li> </ul>                                                                                                                                                                                    |                   |                   |

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|                                                                                 | Autumn 1/Spring 2                                                                                                                                                                                                                                                                                                                                                         | Autumn 2/Summer 1 | Spring 1/Summer 2 | Spring 2/Autumn 1                                                                                                                                                                  | Summer 1/Autumn 2 | Summer 2/Spring 1 |
| Start and End Point                                                             | Start: Project Introduction – Understanding of task and success criteria, and address misconceptions from previous projects.<br>End: Key Assessments and final practical evaluation.                                                                                                                                                                                      |                   |                   | Start: Project Introduction – Understanding of task and success criteria and address misconceptions from previous project.<br>End: Key Assessments and final practical evaluation. |                   |                   |
| Values Curriculum                                                               | Knowledge, Continuous improvement, Character, High Expectations & Leadership<br>Resilience through independent practical and design to show creativity and problem-solving.<br>Respect of health & safety, facilities and consideration to others.<br>Responsibility with potentially dangerous tools and equipment when in a workshop.<br>Supporting peers and teamwork. |                   |                   |                                                                                                                                                                                    |                   |                   |
| Students Areas of Assessment                                                    | Knowledge: Health & Safety, metals, plastics, metalwork tools, design process, electronics.<br>Skills: Metalwork practical skills, and ability to use tools safely and accurately, soldering, use of CAD/CAM.<br>Application: Planning, application of practical skills, and evaluating.                                                                                  |                   |                   |                                                                                                                                                                                    |                   |                   |
| Memory Retrieval                                                                | Mastery curriculum revisits topics (health & safety, materials, tools, processes) across subsequent lessons.<br>Retrieval practice through questioning, cold-calling, recap of tasks, and practical.                                                                                                                                                                      |                   |                   |                                                                                                                                                                                    |                   |                   |
| Disciplinary Literacy                                                           | Reading and interpreting project requirements, careful and considered planning, writing evaluations to reflect on outcomes and successes. Using subject-specific vocabulary accurately.                                                                                                                                                                                   |                   |                   |                                                                                                                                                                                    |                   |                   |
| Alignment with Long Term Plan                                                   | The mid-term plans reflect the progression and content outlined in the long-term plan and Big Ideas document.<br>Practical and theoretical elements are consistently aligned with skills needed to access GCSE level curriculum at KS4.                                                                                                                                   |                   |                   |                                                                                                                                                                                    |                   |                   |
| Context                                                                         | Career Pathways: Topics within the subject are linked to trades, manufacturing industry and design careers.                                                                                                                                                                                                                                                               |                   |                   |                                                                                                                                                                                    |                   |                   |