

Year 9 - Design and Technology

| Topic | Rationale | Knowledge acquisition | Tasks - Notes | Key vocabulary | Skills and enrichment |
|-------------------------------|---|--|---|----------------|--|
| Focused practical task | <p>This topic builds on students' prior learning from Years 7 and 8, developing independence in selecting and applying appropriate tools, materials and manufacturing processes. Students will recall and apply their understanding of timber categories, including hardwoods, softwoods and manufactured boards, and how their properties influence design decisions. Learners will design and manufacture a high-quality trinket box, integrating a CAD/CAM element to enhance precision and creativity in their final outcomes. Throughout the project, students will demonstrate increasing confidence in workshop practice by accurately measuring, marking out and assembling components using suitable techniques, building on previously developed practical skills. In the design phase, students will apply their drawing skills to produce a scaled isometric exploded view, enabling them to clearly communicate how individual parts fit together within an assembly. By the end of the unit, students will be able to independently plan, design and manufacture a functional product, justifying their choices and reflecting on the effectiveness of their outcomes</p> | <p>New Topic: Topic Under development for 2026-2027</p> | <p>Recap timber categories Recap year 7 and 8 projects Measuring marking out Cutting Sander</p> | | <p>Subject specific Skills.</p> <ul style="list-style-type: none"> • Independent practical skills • Problem solving • Graphical communication • Using workshop tools and equipment • CAD/CAM <p>Numeracy</p> <ul style="list-style-type: none"> • Measuring in MM • Use of grid in MM for isometric • Scale <p>Literacy</p> <ul style="list-style-type: none"> • Key vocab, meanings and context • Comprehension of instructions for processes <p>Cultural Capital</p> <ul style="list-style-type: none"> • Sources and origins of materials -impact (Social, moral, environmental. economical) • Designing for purpose • CAD/CAM - Automation <p>Links to National Curriculum</p> <p>Design:</p> <ul style="list-style-type: none"> • Identify and solve their own design problems and understand how to reformulate problems given to them. • Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools <p>Make:</p> <ul style="list-style-type: none"> • select from and use specialist tools, techniques, processes, equipment and machinery • precisely, including computer-aided manufacture • select from and use a wider, more complex range of materials, components and ingredients, taking into account their properties <p>Evaluate:</p> <ul style="list-style-type: none"> • test, evaluate and refine their ideas and products against a specification, taking into • account the views of intended users and other interested groups. <p>Technical knowledge:</p> <ul style="list-style-type: none"> • Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions. |
| | | | <p>Recap of isometric Intro to exploded view – scale Continuation of practical</p> | | |
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