



Number of weeks (between 6&8)	Content of the unit	Assumed prior learning (tested at the beginning of the unit)
8 weeks No. of lessons: 16	Resistant Materials - Box Project In this project, students will apply their knowledge of the design process from the previous year and focus on developing their practical skills for a high quality finish. They will apply these skills in the workshop to make a product based on a theme they create around manufacturing a wooden product. The main aim of this project is to develop students understanding of manufacturing, materials and processes.	Generate, develop, model and communicate ideas through discussion and annotated sketches Understand and use mechanical systems in their products Select from and use a wide range of materials and components, including construction materials, according to their functional properties and aesthetic qualities Evaluate ideas and final product against the specification and consider the views of others
Assessment points and tasks	Written feedback points	Learning Outcomes (tested at the end and related to subject competences)
INVESTIGATION Detailed analysis of relevant existing products or systems undertaken related to design intentions DEVELOPMENT <ul style="list-style-type: none"> Imaginative and innovative ideas have been developed, demonstrating creativity, flair and originality. Further developments made to take account of ongoing research The implications of a wide range of issues including social, moral, environmental and sustainability, are taken into consideration and inform the development of the design proposals Appropriate materials/ingredients and components selected with full regard to their working properties 	Working through the booklets. Feedback and peer assessment will be highlighted at the bottom of the pages. End of Analyse(lesson 2), Application(lesson 3/4), Research (lesson 5), Design (lesson 8), Planning (lesson 12), Making (lesson 18), Evaluating (lesson 20)	Aims of the project: <ul style="list-style-type: none"> To enable students to develop their practical skills - All Band 4 to 7 Gain an understanding of the design process - All Band 5 to 7 To develop skills in designing and modeling with a range of materials - Designing Band 6 and 7 Develop knowledge and understanding of computer aided design - Developing Ideas Band 5 Select and use a range of tools, equipment and processes safely and accurately - Making Band 5, 6 To evaluate work throughout the designing and making - Evaluating Band 6,7 To develop knowledge of designing for a purpose - Developing Design Band 7

Lesson	Clear learning intentions	Clear success criteria	Hook	Presentation of content	Guided practice	Independent practice (homework)	Closure
1	INVESTIGATION IDENTIFY <ul style="list-style-type: none"> Understand the project and how it will evolve over the course Knowledge and understanding of wooden based products 	All: will complete a mind map to determine possible themes for their project and highlight their aims and objectives. Most: will give a detailed list of their aims Some: will make notes of the keywords for the lesson/project	Write your name and target grades on the front section of the booklet.	PowerPoint Presentation - Looking at different types/possibilities of wooden products (Jewellery box, bird houses, money box, Desk tidy etc) Applying a theme to a design project	Workbook - identify page Students fill in the sections with guides and suggestion on the board. Keywords provided Paired discussions on possible outcomes	1. Research and find examples of (at least 2) similar product. Write down the good and bad points for each picture.	Aims and Objectives What do you aim to achieve in this project? Explain in full sentences on page 1.
2-3	DEVELOPMENT Learn how to join plywood together accurately	All: will use glue and nails to join the sides of the box Most: will line the edges accurately and nail together Some: will work independently and lead small demonstration sessions	Workshop preparations. Check the pieces on the table to the board and make sure you have everything. Join 2 pieces of wood together.	PowerPoint presentation Instructions for the hook and starter, step by step process and timer	Teacher led demonstration at the start of the lesson. Clear focus and expectations highlighted. Teacher provides support during practice Instructions on the board		What have you learnt today? What went well? What would you do differently next time? Are you on schedule with the plans? Peer and self assessment



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4	INVESTIGATION ANALYSE Writing a design brief considering the purpose and target audience of the product.	All: will analyse the brief considering the purpose and target audience. Most: will write why the product is needed and how it will be made. Some: will justify their answers and explain how their product will appeal to the target audience.	Look at the products on the board, on the mini white board, write down the target market for each product.	PowerPoint presentation Reviewing examples of design brief What is the purpose of the product? Who is your target audience? Why is it needed? How will you make the product?	Workbook - Analyse page Keywords on the board to be used for the Design Brief summary <i>Differentiation: Sentence starters</i>	Research and find information on timber	Write the design brief summary using key points <i>Differentiation: Sentence starters</i>
5-6	DEVELOPMENT SPECIFICATION <ul style="list-style-type: none"> Knowledge and understanding of product specification Outlining the summary of specification with a MUST, SHOULD and COULD. SURFACE PREPARATION Develop skills for smoothing edges ready for a finish	All: will specify their product using the heading Most: will explain why it is necessary Some: will provide a detailed list for the summary All: will use variety of processes to smooth the box Most: will work towards an even smooth surface demonstrating individual skills	Use the keywords on the board to write a brief specification for each product Run your fingers around the edges of the box and mark the uneven sections	PowerPoint Presentation Class discussion from the starter Students will write their specification using the table as a guide. Extension can be set for additional key areas.	Workbook - Specification page Opportunity to review homework and apply knowledge from different sources. Feedback from peer assessment will determine changes to be made	Produce 1 design idea to suit your chosen theme and meet your specification requirements.	Write the summary of design specification dividing your requirements into MUST, SHOULD and COULD for the outcome
7-9	DEVELOPMENT DESIGN <ul style="list-style-type: none"> Generating suitable design ideas using different techniques Annotating and evaluating ideas Knowledge and understanding of CAD Developing ideas based on feedback	All: will produce a range of design ideas (3) with colour Most: will annotate and evaluate their ideas Some: will use feedback from users to develop their ideas	Compare your homework design ideas. Highlight the best features to use in the next design	Produce a range of design ideas (3) with colours, labels, annotations and evaluations. <i>Differentiation:</i> Use cut out cards, shapes and take photographs CAD (2D Techsoft/Pro Desktop) Students should develop at least 2 design ideas.	Workbook - Design pages Show examples of products. Teacher feedback on quality of drawing and in-depth evaluation	Design the final toy in the space provided. Explain why you have chosen that design and how it will meet your target audience.	Gather feedback from others leading to the final/chosen design (page 9) Review In order to achieve my target, I am going to...
10-11	PLANNING Planning procedures Knowledge and understanding of Health & Safety MAKING <ul style="list-style-type: none"> Knowledge and understanding of the workshop, tools and equipment Health & Safety issues within the workshop (Rules, behavior, safe working practice). Accurately cut, drill and sand materials into the desired sizes and shapes.	All: will complete a plan of making with risk assessment Most: will clearly highlight the materials, tools and equipment Some: will give a detailed skills required and quality control All: cut, drill, assemble different parts together. Add finishing touches Most: will use more than 1 technique Some: will combine 2 or more material	Put the sentences on the board in order of making. Word search - Workshop tools and equipment Gather tools and equipment you need for the lesson Plan step by step what you intend to do today	Video of health and safety in the workshop. Risk assessment strategies Plan of the making using the table. Photographs of the tools and equipment on the board to select from Making stages Cut and shape materials Sand and smooth where necessary Assemble pieces together Apply finish	Workbook - Plan & Make page Class discussion on health and safety Select students to provide solutions to different scenarios Teacher guides students through the process, support given where needed Student led mini plenaries to demonstrate good practice Peer to peer support	Plan of manufacture worksheet or flow chart worksheet	Write down the method and skills needed for each stage of the process and how to maintain quality throughout the making What have you learnt today? What went well? What would you do differently next time? Are you on schedule with the plans? Peer and self assessment Take photographs of the session



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14-15	<p>MAKING</p> <ul style="list-style-type: none"> Knowledge and understanding of the workshop, tools and equipment Health & Safety issues within the workshop (Rules, behavior, safe working practice). <p>Accurately cut, drill and sand materials into the desired sizes and shapes.</p>	<p>All: cut, drill, assemble different parts together. Add finishing touches Most: will use more than 1 technique Some: will combine 2 or more material</p>	<p>Word search - Workshop tools and equipment</p> <p>Gather tools and equipment you need for the lesson</p> <p>Plan step by step what you intend to do today</p>	<p>Making stages Cut and shape materials Sand and smooth where necessary Assemble pieces together Apply finish</p>	<p>Teacher guides students through the process, support given where needed Student led mini plenaries to demonstrate good practice Peer to peer support</p>	<p>Health & Safety worksheet Quality control worksheets Reviewing your final product worksheet</p>	<p>What have you learnt today? What went well? What would you do differently next time? Are you on schedule with the plans? Peer and self-assessment Take photographs of the session</p>
16	<p>EVALUATE / TEST</p> <ul style="list-style-type: none"> Evaluating the final product Production diary Suggesting improvements <p>Gathering feedback</p>	<p>All: will evaluate and test their product Most: will suggest improvements based on feedback from other members of the class Some: will make changes to improve their final product</p>	<p>Suggest possible improvements to the examples on the board</p>	<p>Test the final product Students walk around and test each other's product and write down some feedback Answer the questions on page 13</p>	<p>Workbook - Evaluate page Questions for students to answer regarding their progress throughout the project Peer assessment and feedback from others will help during the reflection stage Teacher assess the form of answers</p>	<p>Gather feedback from family members and suggest further improvements based on their comments.</p>	<p>Reflections on the project. Questions on page 14 of the booklet</p>