



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	Product Design (Clocks) In this project, students will be introduced to the design process at key stage 3 level. The focus will be to develop their knowledge and understanding of designing and making. They will apply a wide range of practical skills in the workshop to make a clock based on their approach and decision making from the proposal to the final design idea.	Use research to develop design ideas that are functional and appealing to the target audience Select from and use a wide range of tools and equipment to perform practical task Investigate and analyse a range of existing products
Assessment points and tasks	Written feedback points	Learning Outcomes (tested at the end and related to subject competences)
INVESTIGATION <ul style="list-style-type: none"> Detailed analysis of relevant existing products or systems undertaken related to design intentions Clear and specific design criteria identified, reflecting the analysis undertaken Target market identified and the intended consumer/user profiled MAKING <ul style="list-style-type: none"> Final outcome(s) shows a high level of making/modelling/finishing skills and accuracy Selected and used appropriate tools, materials and/or technologies including, where appropriate, CAM correctly, skillfully and safely The outcome has the potential to be commercially viable and is suitable for the target market 	Working through the booklets. Feedback and peer assessment will be highlighted at the bottom of the pages. End of Analyse(lesson 2), Research(lesson 3/4), Specification (lesson 5), Design (lesson 8), Making (lesson 16), Evaluating (lesson 18)	Aims of the project: <ul style="list-style-type: none"> To develop students understanding of the design process - All Band 1 to 5 To develop knowledge of designing for a purpose - Developing Design Band 5 To develop skills in designing and modeling with a range of materials - Designing Band 5 and 6 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 5,6

Lesson	Clear learning intentions	Clear success criteria	Hook	Presentation of content	Guided practice	Independent practice (homework)	Closure
1	IDENTIFY <ul style="list-style-type: none"> Understand the project and how it will evolve over the course Knowledge and understanding of clocks and technical terms Mechanism Different types of clocks	All: identify a theme and target audience for their clock Most: will develop their knowledge about product design Some: will gain further understanding of analogue clocks and it's history	Clocks play an important role in our everyday life. It is one of the oldest human inventions used worldwide to indicate, keep and co-ordinate time. Other devices have incorporated time in many different formats. List other devices that you use to tell the time.	Hook leading to different types of clocks. Explanation of showing/displaying the time - am/pm, 24 clocks. Students to demonstrate on the board - What is the time? Examples of clock designs for purpose and audience Examples of Memphis movement clocks	Students will complete a mind map to determine possible themes for their clocks Students will discuss the purpose and functionalities of clock. Teacher demonstrates different examples and clock themes. Could lead into mechanism	Research the definition of mechanisms.	Discussion of possible themes. Students to explain their theme and possible target audience. AND/OR keywords Telling the time on clocks with no numbers (minutes or hour marks)
2	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? Discussion with examples of design brief	Reviewing examples of design brief Write down the purpose of your product, who it is aimed and why it is needed. Write the design brief summary using key points <i>Differentiation: Sentence starters</i>	Research and find (at least 4) examples of different clocks. Print all on 1 sheet of paper. Write down 5 things you like about them and 5 things you dislike about them. Ext: What is innovation?	Write the design brief summary using key points <i>Differentiation: Sentence starters</i>



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3	RESEARCH <ul style="list-style-type: none"> Developing research skills Writing a detailed analysis 	All: will analyse 3 different products using some of the keywords and questions Most: will explain the purpose, function, aesthetics and target audience Some: will make comparisons and explain what they will use or avoid in their own designs.	How would you evaluate this clock? Write down keywords you can use to describe it.	Demonstration of keywords used to evaluate products. Example of a detailed product analysis. Class activity - students use the keywords to evaluate clocks on the board. Task: Use the questions on page 3 to write a detailed analysis about your research in the spaces provided. (Some examples clocks below)	Class discussions on similar products - Possibility for group work. Identifying trends and similarities between products <i>Differentiation: Specific focus on key areas</i>	Complete/write a full detailed analysis of your researched products using the keywords.	CONCLUSION What have you gained from the example clocks? How will the good and bad points you have highlighted influence your design? What features of each existing product could be useful in your design?
4	SPECIFICATION <ul style="list-style-type: none"> Knowledge and understanding of product specification Outlining the summary of specification with a MUST, SHOULD and COULD. 	All: will specify their product using the heading Most: will explain why it is necessary Some: will provide a detailed list for the summary	Write down the MUST, SHOULD AND COULD for the clocks on the board	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.	Students will write their specification using the table as a guide. Extension can be set for additional key areas. Summary of specification in a list or detailed sentences	Produce 1 design idea of a clock 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
5-6	DESIGN IDEAS <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	Write down 3 things you have chosen to use from your research. Highlight the key points from your specification considering the target audience	Produce a range of design ideas (3) with colours, labels, annotations and evaluations. Differentiation: Use cut out cards, shapes and take photographs CAD (2D Techsoft)	Students will produce a range of design ideas (3) with colours, labels, annotations and evaluations. Gather feedback from others leading to the final/chosen design <i>Differentiation: Use cut out cards, shapes and take photographs</i> Introduction to CAD (2D Techsoft) Students should develop at least 2 design ideas.	Design a futuristic clock to be used in 50 years time. Add colour and evaluate your design Complete design evaluations	Gather feedback from others leading to the final/chosen design (page 8). Review In order to achieve my target, I am going to...
8	PLANNING <ul style="list-style-type: none"> Planning procedures Knowledge and understanding of Health & Safety 	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	Rearrange the sentences in order of making	Risk assessment strategies Plan of the making using the table. Photographs of the tools and equipment on the board to select from	Students will complete a plan of making with risk assessment Class discussion on health and safety Select students to provide solutions to different scenarios	Plan of manufacture worksheet	Pyramid - keywords and actions for next lesson Peer assessment



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9-14	<p>INTRO TO THE WORKSHOP</p> <ul style="list-style-type: none"> • Knowledge and understanding of the workshop, tools and equipment <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: will develop their knowledge for the tools and equipment in the workshop. Use the workshop tools to make their clocks</p> <p>Most: will use 2D design in addition to adding other materials (vinyl, acrylic)</p> <p>Some: will work independently and make additional stand</p>	<p>Preparation: Bags under the table, apron on, loose jewellery off, hair tied back, stand at your designated workstation</p> <p>Gather the tools on the board and place in the middle of the table.</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>Introduction to the workshop and safety rules. A look at selection of tools and their purposes</p> <p>Follow the stages on the board or planning in the booklets</p> <p>Cut materials Drill centre hole Use 2D design for additional materials Sand/apply finish Assemble clock mechanism</p>	<p>Students will cut out the shapes of their clocks from different coloured acrylics. They will drill a hole for the clock movement. They will either cut out the numbers using other materials or vinyl.</p> <p><i>Support required during practical.</i></p>	<p>Complete the tools worksheet with the names and purpose.</p> <p>Find the definition of the joints. Write and draw them in the space provided</p> <p>Tools word search</p> <p>Health & safety 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>
15	<p>EVALUATE</p> <ul style="list-style-type: none"> • Evaluating the final product • Suggesting improvements • Gathering feedback 	<p>All: will evaluate and test their product</p> <p>Most: will suggest improvements based on feedback from other members of the class</p> <p>Some: will make minor changes to improve their final product</p>	<p>Suggest possible improvements to the examples on the board</p>	<p>Test the final product</p> <p>Students walk around and test each others product and write down some feedback</p> <p>Answer the questions on page 10</p>	<p>Students will evaluate and test their clock. They will suggest improvements based on feedback from other members of the class.</p>	<p>Gather feedback from family members and suggest further improvements based on their comments.</p>	<p>Reflections on the project. Questions on page 11 of the booklet</p>
16	END OF UNIT TEST						