



Topic Overview

Faculty/Subject: Innovation/DT
Year Group: 8
Topic: Clock project



What BIG IDEAS will you cover in this topic?

students are asked to design a clock for an audience of their choice. They must design the clock to be 150mm x150mm size and it must be made using acrylic with vinyl decoration. They will be encouraged to be creative when sketching and produce high quality designs that link back to their research and specification. Students are encouraged to use CAD/CAM on their design by using 2D Design alongside the CAMM 1 plotter either by designing numerals or creating smaller pieces for their designs. Students will be made aware of potential hazards and risks when working with a variety of different tools and machines. Students will re-familiarise themselves with Health and Safety rules to ensure good practice. Students will gain experience of working closely to a design brief, gaining an understanding of both design and manufacturing processes. Students will also have the opportunity to work with a variety of materials, looking at characteristics and a variety of different construction methods.

What other key concepts, knowledge and skills will you learn in this topic?

- Begin research by collecting images of existing products.
- Listen with maintained attention and show understanding of what they hear during class discussions.
- Discuss experiences of clocks in everyday life.
- Select appropriate images from the internet that meet the design brief given.
- Complete initial designs based on images that they have collected and displayed through a mood board. Initial designs are based on criteria outlined in the chosen design brief.
- Learn about the process of cutting, filing and shaping acrylic by hand and independently create the desired clock using a variety of processes.
- Select and experiment with materials to help develop their final design.
- Successfully complete a clock to a good standard – working safely at all times during practical lessons.

What important prior knowledge will you use from your prior learning?


- Measured and marked out accurately.
- Identified the main stages of making any product.
- Had experience using CAD/CAM.
- Gained some understanding of the design process.
- Have a basic understanding and knowledge of some tools and equipment

Assessment: How and when will you be assessed on this topic? What will the success criteria be?

- Class discussion, peer assessment and oral assessment.
- Teacher and student assessment of design work, practical work, technical language and evaluation.
- Self, peer, oral and teacher assessment methods as indicated within the scheme.
- The class teacher will give summative feedback for research, designing, home learning
- Students will self-evaluate and set targets for future development.

Where does this topic fit into the curriculum plan for this subject?

Use research and exploration, such as the study of different cultures, to identify and understand user needs. Identify and solve their own design problems and understand how to reformulate problems given to them. Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of situations. Use a variety of approaches to generate creative ideas and avoid stereotypical responses. Develop and communicate design ideas using annotated sketches. Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. Analyse the work of past and present professionals and others to develop and broaden their understanding. Investigate new and emerging technologies. Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups. Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists. Understand and use the properties of materials and the performance of structural elements to achieve functioning solutions

 Subject: Design Technology Faculty: Innovation Year Group: 8
EXCELLING (-, =, +)
All of the secure criteria plus: Be able to analyse material choices when thinking about sustainability, 6 R's and social, moral and cultural implications.
SECURE
Autumn Term
Assessment strategy: Informal retrieval practice Teacher/Peer assessment Clock project
Everything from terms 1 plus: Understand the characteristics of different ingredients, materials, components and processes. Understand a range of advanced/ specialist techniques.
Everything from terms 1 plus: Explain why materials, ingredients or components have been used. Identify and justify any changes from the final design idea to the final product.
Everything from terms 1 plus: Work from your own detailed plans Use a range of tools and equipment with precision Carry out a range of specialist techniques (with support and understand the difference between different file types) Produce a high quality, well considered final product
Everything from terms 1 and 2 plus: Designs are rendered to a high standard. Explore different materials, components or ingredients and use technical information to decide if they are suitable for the final product. Model ideas by cooking, 3D models or using ICT design software
DEVELOPING (-, =, +)
Not yet secure with all of the criteria set out for the term.

What is the key vocabulary that you will need to know in this topic?

- Accuracy
- Quality control
- Conversion
- Dimension
- Abrasive
- Analysis

What is the structure of learning/lessons in this topic?

1. Design brief and product analysis
2. Research and Specification
3. Initial design ideas and colour rendering
4. Initial design ideas and colour rendering
5. Final design template and card modelling
6. Marking out and cutting
7. Marking out and cutting
8. Shaping and forming (cross and draw filing)
9. Abrasive paper and finishing
10. Intro to 2D design
11. CAD designs and manufacture
12. CAD designs and manufacture (extension CAM plotter stickers)
13. Buffing, Polishing and Assembly
14. Boring and drilling
15. Assembly and clock mechanism
16. Evaluation