

Year 7 - Design and Technology

Term 2-6 - CAD/CAM Clocks



Students are learning about..... at this point in Year 7 because...

Students will need to learn how to use CAD/CAM to develop their practical and designing skills.

Previous topic: Core Skills

Next topic: Further DT rotation in either Product Design, Food or Textiles

Core knowledge/skills/concepts

Students are to research, design and create a clock that is inspired by shapes and patterns around us. They will research using various methods to investigate existing patterns found on natural and human created objects and discover different ways in how to present their findings. With the help of this research, students will explore a range of possible design ideas for a clock design and learn how to communicate them effectively.

Students will be introduced to Computer Aided Design (CAD). Using computers, they will design their selected pattern and learn how CAD is associated with Computer Aided Manufacturing (CAM). Their design will then be created with the use of a laser cutter, before being assembled with a choice of methods and materials in the workshop. Through this project the following skills and concepts will be covered:

- To understand what CAD is and how it can help designers
- To develop investigation skills including how to design a mood-board
- To understand how design can be inspired by many things, including nature and patterns
- To develop creativity and presentation quality in their designing and understand how to develop a range of different designs from 1 starting point
- To develop knowledge of 2D Design to draw detailed designs that can be laser cut
- To respond to feedback in a constructive way to improve the quality of what you write and draw

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Essential vocabulary

- Inspiration, View Finder
- Repeated, Tessellation, Symmetry
- Annotation, Development, Communication, CAD/CAM
- Vectorise, Intersection, Laser Cutter, Engrave
- Mechanism, Assemble, Glass Paper

Threshold concepts

Students will be encouraged to take forward the concept that Computers can be really helpful for designers, both in the design stage and the practical stage of the process. By the end of this project, they should be more confident in using 2D Design and Laser Cutters in future projects - but also know when they would be appropriate to use.

Opportunities for reading

Any articles in the news that are to do with Design and Technology.

[Technology - BBC News](#)

How and when will the core learning be assessed?

Students will receive 'Live Feedback' throughout the project and be assessed at the end of this project on their investigation and design skills. Students will then receive an overall mark for their work (out of 4). Students will also undertake a written assessment at the end of the project based on the theory covered.

Links to other topics/subjects

The CAD/CAM, investigation and design skills learned in this project will feed into and support all other workshop-based projects in KS3 and beyond.