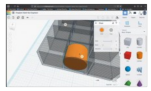
Yr10 Design Technology at CLHS

1. Product Design



Students work to **analyse a** problem that a given client has with his/her headphones/ earphones. This is used as a premise of the project. **Research** is carried out in the form of an interview, questionnaire and survey. Existing products are **evaluated** and design decisions are made, they are annotated using **FASTERCOMM**. A brief and specification is created based on the research. Initial ideas are created and **annotated**, the best idea is carried forward and developed in 5 stages to come up with a suitable design solution that meets the needs of the client. The design is realised using **CAD software** and cut using CAM. This is then evaluated against the specification and self/peer assessed in detail. Feedback is acted upon where possible.

Assessment 1: (October)
Assessed on level of work completed, how well has their solution met a brief? How innovative are the designs? How well have the designs been executed? Have you assessed your product in a suitable way?

2. Architecture

Students are shown how professionals in a real **architecture** practice think and come up with concepts. This can be related to the careers week year 10 embark on later in the year. A narrative for a project is created and a Design identity or style is nurtured through conceptual drawing and model making. This is accompanies by **isometric drawings** and **analysis** of the **conceptual** models. The concept is carried forward and turned into a series of technical plan, elevation, section and 2 point perspective drawings. These are turned into 3D CAD models using SketchUp. They are furnished and **rendered** – the final part of the project is making a physical model of the finished design that meets the need of a client. This is done using modelling board and foam. As with other projects, the **evaluation** is based on how well the solution meets the needs to the client and how well the student has created a narrative and design identity.

Assessment 2: (Early December)
How well have you created a design style? Have you created a suitable concept? Are your technical drawings accurate? Is your CAD work accurate? To what quality have you produced a final prototype?

Half term 1

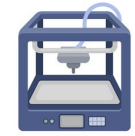
Half term 2

Half term 3

Half term 4

Half term 5

Half term 6



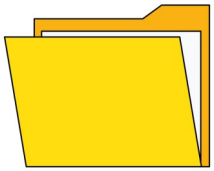
3. CAD/CAM

Students are given a maximum size to create a Christmas eve box to take home and use. Students **Use CAD software 2D Design** to create the shape of their box. They are shown how to add comb joints to the box to fix together. Students select an image/design/pattern to add to their box. This is added using the **Vectorising Bitmaps** tool. Students have their boxes cut using CAM laser cutter. They then sand down the box, assemble using PVA glue. A hinge is added to the back and components applied. Students then varnish and fine sand their boxes to a **commercial standard** and take home to enjoy.

Assessment 3: (Late December)
How accurate is your CAD drawing? Is your CAM successful and to what length? Has your assembly been a success/ accurate and quality controlled? To what extent have you applied a finish?

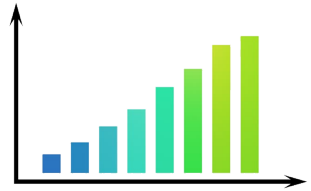
4. Mini NEA

Students **analyse** all context of '**multifunctional design' research** is undertaken to gain an understanding of a client's wants and needs. A comprehensive set of researched data is presented and worth 10 marks. A **brief** and **specification** is created based on the client. This is worth 10 marks. Up to 20 marks are then awarded for coming up with a range of innovative ideas that solve the client's problem. This idea is then developed in stages, prototypes are made and project management documents are created to ensure a well manufactured final solution.



Manufacturing commences with a mixture of hand tools and **CAD/CAM**. A working prototype is made and finished to a commercial standard to achieve up to 20 marks. **Evaluation** and **analysis** then takes place to pass judgement on the solution, based on **functionality** and **aesthetics** among others.

Assessment 4-9: (January to June)
We will test all 6 stages of the NEA and use AQA marking criteria to score out of 10 (A and B) or 20 (C, D, E, F)



Baseline Tests
These are taken in January before theory topics are studied in earnest

5. Theory Topics

There are 3 topics broken down into 7 units of study, Core **Technical Principles**, **Common Specialist Principles** and **Designing and Making Principles**. Student complete baseline tests to begin with. We then study each study depending on which part of the NEA it may link with. Students start with New and Emerging Technologies and move through the units until 3 units of the 7 are complete. The final 4 are covered in year 11. The lessons consist of **note taking** and gathering information as a group and individually before completing a worksheet and an accompanying homework.

End of topic tests
Taken online after each topic is studied. Further tests are taken at regular intervals to show recall skills