



Content - Big ideas

At the end of each module student complete a star diagram self assessment chart. At the beginning of each of their new module pupils set targets based on prior evaluation and teacher assessment feedback. Pupils will rotate around four D&T subject specialism modules in Y8.

Design/ Theory

Big question: What do I need to know to be able to design and make a product from Wood based, Polymer based and Metal materials? **Learning outcome:** Students will be able to : collect research, analyse the task and research, Come up with two ideas for and develop the product they are going to make. Pupils will learn about making scale models and learn how to select, order and work with their chosen materials.

- **Health & Safety rules** - Pupils will make use of the disc sander which has been taught in Product design as well as becoming efficient in using other tools and machinery safely. The main aim for H&S in Y8 Res mats will be the use of a bench top Bandsaw. The pupils will need to successfully complete and bandsaw test to be able to use this machine in the future.
- **Use of CAD** – Learn how to drawn basic outlines on Techsoft 2D design (Computer aide design). Pupils will develop the ability to take images from the internet and vectorize to use on their clocks designs. Pupils will be able to use Drop in (a shared saving space) to send their designs to the laser cutter. Some pupils will choose to draw in spaceclaim and make use of the 3D printer to enhance their clock.
- **Drawing in 3d and 2d**- Develop further the skill of presenting designs in 2d and 3d using oblique and Isometric projection. This will be developed in home works which will ask pupils to produce a step by step plan of making with diagrams.
- **Evaluation**- Pupils will be expected to evaluate their work all the way through designing and making so that development can take place.

Practical/ Making skills

Big question: How do I use tools and machinery in the workshop to mark out, shape, join and finish wood, plastic (polymer) and metal products.

Learning outcome: Pupils will make a scale model of their chosen clock design. They will use 'Cutting lists' to plan out the sizes of the materials that they need. This will allow them to become proficient at measuring and understanding the range of materials that they can choose from. Making will be in the following broad sections:

- **Marking out**- Learn to measure in mm accurately and learn to use a try-square to make sure marking out is 'square'.
- **Drilling** – Learn how to accurately and safely use a Pillar drill to cut 'through' and blind holes.
- **Cutting** – Learn how to use a Band saw, coping saw and Tenon saw to cut materials and how to hold the work piece effectively in a bench vice.
- **Shaping** - Remember how to use a file, emery cloth, wet and dry paper and polish (brasso) to shape and smooth polymer
- **Joining**- Learn about the various ways of joining materials- Adhesives (Tensol solvent glue, Multi purpose glue, PVA glue).
- **Finishing**- Learn how to finish wood, metal and polymer based materials.
- **Evaluation/ Review**.

Big question: How well did I perform within their practical making skills section?

Learning outcome: Students will be able to reflect back on the skills covered within the making and use this in order to help improve their skills for future projects.

- **Self Assessment** - What went well/what was easy? WHY?, What wasn't successful/what was difficult? WHY? What new skills have you learnt?, if you had the chance, what would you change and why?
- **Peer Assessment** – Create a multiple choice questionnaire to gather student opinions. Results can then be placed into a pie chart format.

Prior learning

Prior learning required

Completion of D&T transition days and Intake evening/days. Some D&T may have been taught in KS2 which is beneficial but not imperative.



Global/IOM/Subject Links

Links to other subjects

- Materials families- Chemistry and Biology.
- Use of CAD (Design) and CAM (Manufacture) – ICT.
- 3d drawing- Art and Design.
- Linear measurement and angle measurement- Maths.

Links to Global picture

- Sustainable use of materials.
- Needs of a market.
- **Links to IOM**
- Being a good consumer (being able to select sustainable products). Knowledge of where local materials come from.



	CARE Values
COURAGE	'I will challenge myself and be brave in my learning'
ASPIRATION	'I will strive to do my utmost, to achieve my goals'
RESPECT	'I will be polite to all and look after our school environment'
ENDEAVOUR	'I will aspire to complete my learning to the best of my ability'