

Year 8 Design and Technology

In Year 8, Design and Technology students build on the knowledge and skills taught in Year 7. They complete two projects and have a broad range of experiences, using CAD, CAM and work in systems and control by creating a circuit board for a product. Students are reminded of the expectations for Health and Safety, thorough planning and producing a quality product. Alongside these lessons run similar core lessons, taught as a stand-alone lesson. In Year 8, this focuses more on the wider world of Design Technology, the need for renewable energy systems, designing products for users and the future of the use of plastics. In these lessons, students gain the extra knowledge required to be experienced and well-informed Design Technology students, with an appreciation for all things associated with the subject.

Methods of deepening and securing knowledge:	
Spaced practice	Students are encouraged to use spaced practice by following the design process. With the first practical project, students use research and investigation to make informed decisions when designing, which in turn help them plan their work. They use feedback from clients throughout and ensure that their work links together. Each stage has a purpose, rather than just completing each stage with minimal impact on the end product.
Retrieval practice	Students will use retrieval practice throughout both projects in Year 8. The projects require a higher level of skill and ability than in Year 7, but the foundations for the stages of the design and make process are the same. Students refer back to each stage throughout and use their previous knowledge to ensure they are completing each piece of work effectively. Retrieval is also more obvious when following Health and Safety expectations and ensuring that students follow the correct rules, routines and regulations.
Concrete examples	In Year 8 students are given practical projects and have concrete experiences of working in that area. Students will be taught the stages and the processes, and then complete the work themselves, giving them concrete examples and experiences of the work required to make their project successful.
Dual coding	Dual coding is evident in the practical projects as students are taught the process and then have a go at it themselves. Students are shown good and bad examples and the correct way to complete a stage or process and then complete the process themselves.

	Autumn term 1	Autumn term 2	Spring term 1	Spring term 2	Summer term 1	Summer term 2
Topic(s) <i>(The focus can vary depending on resources available. Students rotate through the 3 areas for the first project).</i>	LED Light Box: Electronics - Health and Safety reminder - Introduction to the project	LED Light Box: MDF Base - Students follow more simple making instructions to create the MDF	LED Light Box: Acrylic Display - Use of CAD - Use of CAM (laser cutting)	Aluminium Tea Light Holder - Design work - Creating templates	Aluminium Tea Light Holder - Using traditional sheet metal processes	Aluminium Tea Light Holder - Finishing - Sheet metal forming

	<ul style="list-style-type: none"> - Students complete a light sensing circuit for their LED light box 	<ul style="list-style-type: none"> base for their LED light box - Use traditional woodworking methods and instructions - Focus on marking out, use of correct tools/equipment 	<ul style="list-style-type: none"> - Quality assurance and checks - Evaluating final product 	<ul style="list-style-type: none"> - Use of prototyping - Traditional hand skills - Use of metal - Properties of aluminium - Use of surface developments 	<ul style="list-style-type: none"> - Cutting, shaping and finishing Aluminium tea light Holder 	<ul style="list-style-type: none"> techniques and processes - Evaluating
Assessment	<ul style="list-style-type: none"> - Baseline assessment - On-going assessment of investigation - Assessment of design work 	<ul style="list-style-type: none"> - Assess practical skills - Assessment of keywords/literacy 	<ul style="list-style-type: none"> - Assessment of use of CAD software - End of project test 	<ul style="list-style-type: none"> - Assessment prototyping and planning 	<ul style="list-style-type: none"> - Assessing practical progress 	<ul style="list-style-type: none"> - Assessment of overall project - End-of-project test
CEIAG (<i>Careers that are linked to that topic</i>)	<ul style="list-style-type: none"> - Electronics Industry - Creating products using electronics as the focus 	<ul style="list-style-type: none"> - Timber Manufacturing Industry - The use of Manufactured Boards 	<ul style="list-style-type: none"> - CAD/CAM Careers - Use of Computers to aid Design 	<ul style="list-style-type: none"> - Sheet Metal work industry - Producing Prototypes 	<ul style="list-style-type: none"> - Sheet Metal Work 	

Independent Learning:

Independent learning for both projects follows a 'take-away' system. Students are given a list of tasks to complete throughout the project and can complete whichever of these they like. Teachers will insist students complete one of these tasks once every two weeks, however students can decide which one they complete. The tasks are listed in books, or on the Google Classroom.

Students will also have a half-termly Language For Learning independent learning. These will be articles relating to the wider world of Design Technology.