

The Dean Academy 5 year Implementation overview:

The mastery of skills, both in terms of knowledge and application allows progression into creative design and engineering manufacture in a rapidly changing technical world. The practical skills learnt in Design Technology makes a unique contribution to the development of young people by preparing them to participate in, think about and intervene creatively to improve the quality of theirs and others' lives.

Design Technology provides students with the exciting opportunities to develop their capabilities, combining designing and making skills with knowledge and understanding, to produce high quality outcomes in a wide range of materials and using a wide range of tools and machines from traditional equipment to state of the art technologies.

We emphasises the importance of accuracy and practice in developing students making skills to a critically high standard, developing their fine motor skill and dexterity to produce high quality products. Design is a way of thinking creatively, taking ideas and turning them into practical reality for a wide range of users. This is vital for the future prosperity and economic health of our local community and the UK at large. Working individually and as part of a team are essential skills that underpin all communities and businesses and are needed for all careers. Recognising the need to share resources, skills and support others is a vital skill and an understanding that is developed in Design Technology.

Keystage 3 Design Technology operates on a carousel basis, with students normally spending between 10 and 14 weeks with one teacher and specific subject media, rotating as a class to a new teacher and media. Different practical projects and design folder work and theory are taught in different areas. Some medium areas focus on practical tasks, others combine both practical and technical theory.

Areas include; Resistant materials – RM (predominantly Engineering and Carpentry), CAD (Computer Aided Design), Food (with a Hospitality & Catering focus) and Textiles. Technical drawing can be delivered as a stand alone unit or as part of RM module.

Keystage 4 Subjects are taught as separate specific subjects, we currently offer; Constructing the Built Environment, Engineering, Hospitality & Catering and Product Design

		Resistant Materials	Food	Textiles	CAD	
Year 7	Knowledge	1. What is the Design Process? 2. How do designers draw? 3. How do we research; Product Analysis, Technical words? 4. How do we generate design ideas? 5. How do we plan how to make products? 6. How do we evaluate our product?	1. Introduction to the kitchen environment, Health and Safety expectations 2. Introduction to food hygiene 3. Safe use of knives. 4. Parts of the cooker, temperature control and how to operate. 5. Washing up procedures 6. Time management 7. Food commodities: fruit and vegetables	1 What is the design process? 2 What is batik? 3 How do we research; Product Analysis, Technical words? 4 How to operate and control a sewing machine. 5 How do we plan how to make products? 6 How do we evaluate our product?	1. What is CAD? 2. What is Orthographic Projection? 3. What are the key line types used in technical drawings? 4. What is Isometric Projection	
	Skills & Concepts	Using a range of hand tools and machines safely and accurately. Marking out materials accurately using either Carpentry or Engineering specific marking out tools. Cut and shape materials using a range of tools and machines. Assemble a range of components to produce a final product e.g. Shield, Coat Hook.	Develop confidence to work safely with a wide range of kitchen equipment (risk assessment) Ability to work both in a team or as an individual To develop subject specific vocabulary. Evaluating working and product outcomes To develop practical food skills in line with the Hospitality and	How to produce a piece of decorative batik work using melted wax and natural fibre fabric. Learn about parts of the sewing machine and demonstrate how to thread it up correctly. Prepare, assemble and machine sewing for a quality outcome for a decorative cushion.	Learn how to use 2dDesign Software, using the key commands to develop a range of technically accurate drawings, following British Standards and conventions. Produce to scale Orthographic drawings (including construction, object and hidden detail lines) Learn how to draw in Isometric, producing a range of drawings	

SUBJECT CURRICULUM PLAN 2024 - 2025

			catering/ Food and Nutrition KS4			
Common Misconceptions	Saws have different names A Tenon saw is for Wood Hacksaws are for Metal	Weighing out isn't important.	Tacking is a waste of time before machine sewing.	CAM – computer aided manufacture CAD – computer aided design		
Links to prior learning	KS2 design process chart	KS2 design process chart	KS2 design process chart	KS2 design process chart		
Links to future learning	All projects link to the next years content and ultimately lay the foundations of KS4 subjects; Engineering, Product Design and Construction and Hospitality and Catering	All projects link to the next years content and ultimately lay the foundations of our KS4 subject, Hospitality and Catering level 1 /2 Technical award	All projects link to the next years content and learning of the design process needed for KS4 courses.	Engineering – technical drawing skills to communicate a design idea in Unit 1. Product Design – to produce an Orthographic drawing of the final solution.		
Assessment	Homework is fortnightly developing knowledge learnt in class. Knowledge retrieval, regular self marking, end of module test consisting of short and longer knowledge and application questions.					

SUBJECT CURRICULUM PLAN 2024 - 2025

		Resistant Materials	Food	Textiles	CAD	
Year 8	Knowledge	What is a Centre lathe? What are the key processes performed on a centre Lathe? What is an Electrical circuit? What are key electrical components in a circuit? What are Smart materials? Why are they so special and what are examples of them?	1. Develop knowledge of food hygiene and food storage- meat introduced. 2. Develop basic food preparation and skills, 3. methods of cooking, frying, grilling, baking. 4. Food Nutrition, the eatwell guide. 5. what is meant by a 'Balanced' / combination meal	1. Learning about a range of decorative fabric techniques. 2 Build on basic fabric construction rules. 3. How to prepare and check equipment for problems 4. What is a 'good' product through product analysis.	1. What is CAD? 2. What is Orthographic Projection? 3. What are the key line types used in technical drawings? 4. What is Isometric Projection	
	Skills & Concepts	Using geometry to construct a Hexagon. Using the Lathe to machine a spigot; Facing off, Parallel and Taper Turning. Silver soldering safely with plumber solder Soft Soldering components using a soldering iron. Using Polymorph smart material to produce a bespoke handle	Introduction of high risk foods and how to prepare, cook and store them safely. Time planning for independent cooking practical- Pizza To further develop subject specific vocabulary To further develop practical food skills in line with the Hospitality and catering/ Food and Nutrition KS4	Develop designing skills that suggest, describe and identify features of the product. Using decorative fabric hand skill to produce an attractive product. Using sewing machines to give a secure, quality finish to the 'contain it' product. Analyse and evaluate the outcome to suggest improvements.	Learn how to use 2dDesign Software, using the key commands to develop a range of technically accurate drawings, following British Standards and conventions. Produce to scale Orthographic drawings (including construction, object and hidden detail lines) Learn how to draw in Isometric, producing a range of drawings	
	Common Misconceptions	Smart materials change colour. There is only 1 type of soldering .	High risk foods don't need to be kept cold	Preparation to secure fabric before sewing permanently is not necessary	CAM – computer aided manufacture CAD – computer aided design	
	Links to prior learning	Y7 What is the Design Process? Y7 Carpentry skills Y7 Resources	The eatwell guide and food groups. Development of basic knife skills	Y7 cushion project Use of the sewing machines	Y7 CAD module	
	Links to future learning	Y9 Engineering project Y10 Engineering Wind Vane Y11 Engineering & Product Design exam content	All projects link to the next years content and ultimately lay the foundations of our KS4 subject, Hospitality and Catering level 1 /2 Technical award	Any design/art related course.	Engineering – technical drawing skills to communicate a design idea in Unit 1. Product Design – to produce an Orthographic drawing of the final solution.	
	Assessment	Homework is fortnightly developing knowledge learnt in class. Knowledge retrieval, regular self marking, end of module test consisting of short and longer knowledge and application questions.				

SUBJECT CURRICULUM PLAN 2024 - 2025

		Resistant Materials	Food	Product Design	Graphics
Year 9	Knowledge	What is knurling? How are threads made? What is lamination? What are the properties of common metals; Aluminium, Steel & Brass?	Further development of Food hygiene, temperature control, storage and food spoilage. Develop more complex preparation and cooking skills. Sourcing and selecting appropriate recipes for specific scenarios and individual skill level. Subject specific vocabulary in line with KS4 progression	What are Mechanisms? What do they do? What are the 4 types of movement? What are the 4 key forces?	What is pictorial drawing? Isometric, one point perspective, two-point perspective and Isometric. What is Orthographic Projection? What is CAD and CAM?
	Skills & Concepts	Using a lathe to centre drill. Knurling Aluminium. Tapping a hole. Laminating and bending wood. Using CAD to design a spinner.	More complex dishes explored and completed within the time limits of the session. Developing the relevance of time planning of a chosen dish/ dishes. Developing skills to correct problems. Recipe sourcing and consideration of cost, dietary needs and suitable cooking methods	Introduction to carpentry joints. Fabrication using wood. Constructing a mechanical toy, converting movement and motion.	Introduction to pictorial drawing can be used to help communicate design ideas and thinking. How CAD can be used to produce accurate scale drawings in Isometric and Orthographic views. Learn about designers, materials and specialist processes used in Product and Graphic Design.
	Common Misconceptions	All metal is steel and have the same properties.	Cooking food on a higher temperature cooks it safely and quicker.	Forces are limited to push and pull	The use of drawing boards, and the accuracy required with set squares.
	Links to prior learning	Y7 Design Process Y7 Carpentry tools and processes Y8 Centre Lathe basics	Y7 Kitchen hygiene and safety Y7 & 8 Practical knife skills and cooking methods. Y8 Handling high risk foods and safe food storage	Y7 Design Process Y7 & 8 Carpentry tools and processes	Y7 Design Process Y7 Shields and pencil boats Y8 Steady hand tester
	Links to future learning	Y10 Engineering Wind Vane Y11 Engineering & Product Design exam content	All projects link to our KS4 subject, Hospitality and Catering level 1 /2 Technical award Units 1&2	Y11 Engineering & Product Design exam content	KS4 Product Design KS4 Engineering
	Assessment	Homework is fortnightly developing knowledge learnt in class. Knowledge retrieval, regular self marking, end of module test consisting of short and longer knowledge and application questions.			