

Design

Year 8

Curriculum Overview

Intent: Year 8: By the end of the year...

Students will show development of skills and understanding from topics covered in year 7

Students should be able to identify and use a range of specialist tools, techniques, processes, materials, ingredients, equipment and machinery

Students will speak with confidence about meaning and performance as features of the built, manufactured or designed environment and the natural world, and articulate how these concepts drive the processes of design.

Students will have used research and understood user needs to identify a design problem.

Students will know how to generate ideas and how to represent them using sketching and modelling techniques, including technical drawing.

Students will know what is meant by analysis and evaluation and will start to apply it to their work and the work of others. They will begin to understand the developments in design technology.

Students will understand the principles of nutrition and health and start to apply them. They will understand the sources of ingredients and different cooking techniques and will have started to cook a repertoire of dishes as part of a healthy and varied diet to feed themselves. Students will know and understand health, safety and hygiene while working in a practical environment.

	AUTUMN 1	AUTUMN 2	SPRING 1	SPRING 2	SUMMER 1	SUMMER 2
	Assessment 1			Assessment 2		
Core Course Topic: These topics are taught through the identified terms. They are taught in small bitesize chunks and revisited regularly.	Across the year students will cover these 5 core topics: Key Concept focus: Meaning Understanding of Meaning in design as the power to create and manipulate images, objects and ideas so that they signify, symbolise, represent or seem associated with other images, objects and ideas. Exposure to examples and opportunities to research artists, designers or chefs whose work manipulates form and meaning.					
	Key Concept focus: Performance Understanding of Performance as 'how things do what they do'. Development of descriptive and critical language to describe how a design, product or process 'performs'. Exposure to examples and opportunities to research artists, designers or chefs whose work incorporates dynamic performative function or engineering					
	Design principles: Be able to research and explore, identify user needs and design problems. Develop a specification that responds to a situation. Use a variety of approaches generate ideas. Develop and communicate design ideas through a series of outcomes.	Making Principles: Select from and use specialist tools, techniques, processes, equipment and machinery precisely, including computer-aided manufacture. Select from and use a wider, more complex range of materials, components and ingredients, considering their properties.	Technical principles: Be able to make the appropriate selection of materials and ingredients. Understanding of temperatures. The construction of 2D/3D models.	Sustainability and environment: The 6 R's. Primary, secondary and tertiary recycling. The product lifecycle. Upcycling. Renewable energy sources. Fair trade and organic produce.	Analyse and Evaluate: Analyse the work of past and present professionals and others to develop and broaden their understanding. Investigate new and emerging technologies. Test and evaluate their ideas and products against a specification. Understand developments in design and technology, its impact on individuals, society and the environment, and the responsibilities of designers, engineers and technologists.	
Additional support links: Here are links to additional resources which will help your child	http://wiki.dtonline.org/index.php/Main_Page - A range of DT related information and resources https://www.stem.org.uk/home-learning/secondary-design-technology - A range of STEM and DT related information and resources www.technologystudent.com – Under heading of 'New D&T GCSE' there is an area based on Timbers and wood joints which is particularly useful. Also under 'Mathematics in Design Technology' there are a range of maths activities linked directly to DT.					
Knowledge: Included here is the specific knowledge your child will learn in detail	Designing principles <u>Pupils must have the ability to adapt and refine:</u> This could be a technical design in isometric or orthographic style or a simple dish to make it healthier and/or more appealing	Making principles <u>Pupils must be able to confidently select the correct equipment and tools, linking to health and safety. This could be through any of the following:</u> Use and understand appropriate use of a coping saw and a tenon saw. Skills using a pillar drill and screwdriver.	Technical knowledge <u>Pupils should be able to confidently explain properties of materials and be able to select appropriate materials for different uses: This could include:</u> Knowledge of wood joints and appropriate use. The origins of Timber	Sustainability and the environment <u>Learn what sustainability is and how it can be achieved through any DT specialist area.</u> Introduction to the 6R's: Reuse, refuse, reduce, recycle, repair, rethink in relation to any DT specialist areas and how they can be used to benefit the	Analyse and evaluate Develop different techniques to evaluate the effectiveness of a series of practical outcomes. Product analysis of an existing product. Able to evaluate focussed on functional testing.	

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THE HART
SCHOOL
Creative
Education
Trust

	<p>Design a range of ideas based on a brief and develop ideas using feedback from others</p>	<p>Understanding of different finishes include use of sandpaper, the sanding machine and stain/paint/dye etc. Working with paper and board with growing independence and competence. Application of different adhesives for paper and board. Effective application of colour and design. Hand and machine stitching with growing independence and competence.</p>	<p>and difference between hardwoods and softwoods. Appropriate selection of paper and board, nets, more complex 3D structures or 2D layouts, scoring and perforation. Applying colour theory. Further developed understanding of joining methods to create more complex 2D and 3D constructions made by hand and machine.</p>	<p>environment when it comes to design and making. Primary, secondary and tertiary recycling. The product lifecycle. Upcycling. Renewable energy sources</p>	<p>Different techniques for analysing of existing design work or the work of others Product analysis of an existing product. Evaluation of own work, focussing on functional testing. <u>Food:</u> Develop the use of effective sensory analysis to explore key terms of flavour and consistency with multiple areas of improvement discussed.</p>
<p>Skills: Included here is the specific skills your child will learn in detail</p>	<p>Independence, accuracy, time management and sequencing, analysis, evaluate, adaption, group work, using a range of equipment, problem solving, adaption and development, analysis. Identifying issues and solving them. exploration, identifying issues and problem solving, trial and error, understanding the needs of others, understanding cultural and social needs, working independently, working in teams, analysis and evaluation, time management and sequencing, making links between different areas of knowledge, dexterity and practical skills.</p>				
<p>Common Lexicon: These are the key words and terms learnt. These can be found on knowledge organisers.</p>	<p>All: Shape, form, scale, variation, brief, testing, analysis, evaluation, measurement, environment, sustainability, designing, making, technical.</p> <p>Depending on the DT specialist areas taught, common lexicon may include:</p> <p>Paper & board: Design brief, explore, analyse, assess, evaluate, paper, board, quality control, accuracy, typography, serif, sans serif, italic, bold, monochrome, analogous, complementary; signs and symbols, non-verbal expression, identity, representation, symbol, icon, brand, allegory, figurative/abstract, ambiguity, anthropomorphic; legibility, contrast, scale</p> <p>Textiles: Applique, reverse applique, transfer, print, hem, symbolism, ceremonial, water-resistance, conductive fabrics, interactive textiles, microfibres</p> <p>Metal: Stainless steel, aluminium, copper, bronze, galvanise, metal ore, weld, temper, brazing, pewter casting, ferrous, non-ferrous</p> <p>Plastics: acrylic, pvc, polypropylene, thermosetting, thermoplastic, vacuum forming, line bender, laser cutter</p> <p>Mechanisms: input, process, output. Levers, linkages, rotary, linear, reciprocal, oscillating CAD/CAM: CAD/CAM (computer aided design and computer aided manufacture), CNC (computer numerical control), software, hardware</p> <p>Sustainability and the environment: Reduce, refuse, recycle, repair, reuse, reduce, life cycle analysis, waste, landfill, pollution, ozone, primary, secondary, tertiary</p> <p>Typography and print: serif, sans serif, grid, layout, CMYK (cyan, magenta, yellow, key or black), offset lithography</p> <p>Industrial design and production methods: JIT (just in time), lean manufacturing, FMS (flexible manufacturing systems), one-off, batch, mass, continuous</p>				