

Design Technology Curriculum overview

All children are entitled to a curriculum and to the powerful knowledge which will open doors and maximise their life chances. Below is a high-level overview of the critical knowledge children will learn in this particular subject, at each key stage from Reception through to Year 11, in order to equip students with the cultural capital they need to succeed in life. The curriculum is planned vertically and horizontally giving through to the optimum knowledge sequence for building secure schema

Knowledge, skills and understanding to be gained at each stage*

		Cycle 1	Cycle 2	Cycle 3
EYFS	Know and remember			
	Do			
YEAR 1		How can we be wise and stay safe? - Safety within the construction provision area	What do we need to survive? - Building a shelter	Can we save the world? - Designing an enclosure for an animal
	Know	How to be safe when building structures in the construction zone or outdoor provision.	What materials make a good shelter	What does an animal need
	Experiment			
	Observe			
	Make	Structures		
	Evaluate			
	Vertical and horizontal interleaving			
YEAR 2		Can you judge a person by their clothes?	What is the greatest invention in my parents' lifetime?	If you were on a journey, where would it take you?
	Know	The purpose and appeal to the user when designing. The needs of the user. How to: Thread a needle, use a running stitch to join fabrics. Draws round a template onto fabric and cuts out the shapes.	Uses different kinds of tape, considering the purpose of each and explaining their choices.	Explores and uses sliders and levers Understands that different mechanisms produce different types of movement
	Experiment	Using different colours Practising running stitch using Binca fabric.		Split pin sliders and lever mechanisms
	Observe	Existing clothes and materials.		
	Make	Traction man's outfit		A moving scene depicting a journey
Evaluate				

	Vertical and horizontal interleaving			
YEAR 3		What makes each continent unique?	Are all cities like Bradford?	Would we like to have been Victorian children
	Know	Creates drawings which identify dimensions and measurements of pieces. Generates, develops, models and communicates their ideas through discussion, annotated sketches and prototypes	Uses existing design criteria to inform designs and models	
	Experiment			
	Observe			
	Make			
	Evaluate			
	Vertical and horizontal interleaving			
YEAR 4		Is it important our achievements are remembered?		What have the ancient Greeks left behind?
	Know			
	Experiment			
	Observe			
	Make	Lifting device using pulleys and levers	Steady hand game	
	Evaluate			
	Vertical and horizontal interleaving			
YEAR 5		What did the Romans do for us?	Should children be allowed to travel to space?	
	Know			
	Experiment			
	Observe			
	Make	<i>Bridges</i>	<i>Rockets</i>	
	Evaluate			
	Vertical and horizontal interleaving			
YEAR 6		How does the Earth's movement affect lives (mountains and volcanoes)?	WW2 - Rationing	
	Know	Applies knowledge of electrical circuits Incorporates electrical components (buzzers, lights, switches) into products	Uses their knowledge of existing products to help generate their ideas . Understands: <ul style="list-style-type: none"> - that seasons affect the food available. - how food is processed into ingredients that can be eaten or used in cooking. Writes own recipes based on existing recipes.	

			Uses oven and hob controls according to recipes.	
	Experiment		Designing	
	Observe		Existing recipes, rationing and common food substitutes. WW2 food packaging and style	
	Make	A detailed design of a rescue vehicle for a volcanic region. An electric car model		
	Evaluate			
	Vertical and horizontal interleaving			
YEAR 7 (1 lesson a week – previously 13 week rotation)		What does it mean to be human? Identity – Money Box	What determines the direction we take? Hanging Mobile	Why are relationships important? Board Game
	Know	H&S in the workshop What imagery best represents themselves and why. How to adapt their product for a different client need - age, ability, H&S, likes & dislikes. Name different types of wood/wood products - pine, MDF Name tools and equipment and how to use these - coping saw, Tennon Saw, dovetail saw, file, bench hook, G clamp, sanding machine, pillar drill.	H&S using new equipment. How to plan a product to fit a client brief. Correct working practices with different materials. (Tools and techniques) Alexander Calder - known for inventing wire sculptures and the mobile, a type of kinetic art which relied on careful weighting to achieve balance and suspension in the air	H&S using new equipment. Die cut. How to create and explore a chosen theme. Develop and test ideas to make a playable board game. How graphical products are made in industry, relating to printing.
	Experiment	Design ideas, colour pencil, Felt tip pens.	Design ideas, shapes for elements of a mobile, plastics and melting bottle tops, colours	How to represent the theme of relationships in the board game, how will it work? The imagery used, Designs for board game pieces.
	Observe	Existing product for inspiration. Decoration of money box will require students to draw logo's/graphics that represent their identity.	Alexander Calder designs and existing mobile products.	Existing board games need to be observed and studied to understand what rules are required to make a functional board game.
	Make	Make a good quality Money Box with precision Using a range of tools, equipment, processes and materials safely. Finished with felt tip pen personal design and varnished for permanence quality finish.	A mixed material hanging mobile produced in groups to hang in the school building. This will be based on the school values Happiness, industry, responsibility.	A board game that is about relationships. Students will design and make the board game itself, the pieces for the game, any rules set, and some students may design a box to put the board game in.
	Evaluate	Evaluate work throughout designing and making process. Suggest improvements.	Evaluate work throughout designing and making process. Suggest improvements.	Evaluate work throughout designing and making process. Suggest improvements.
YEAR 8 (1 lesson a week – previously 13 week rotation)		How do we face challenge? Repurposing a pallet into a product	Why does responsibility matter? Graphic chocolate bar box.	Should the world Celebrate? Architecture
	Know	H&S in the workshop reminder and recap from Y7	Waste & sustainability relating to the graphics and printing industry.	Different architectural styles within Bradford – Contemporary and Gothic.

		<p>Where the pallet has come from (life cycle of a pallet)</p> <p>6R's knowledge and how are scholars going to apply the 6R's to their design work.</p> <p>To know how to design a product for a client and their interests.</p> <p>How to use a coping saw to cut a complex shape.</p>	<p>To know how to respond and work to a brief given by the teacher.</p> <p>Tools/machinery printing, vacuum forming.</p> <p>To know how to design a product to fit the needs of a theme.</p>	<p>Know what architecture is and what an architect does.</p> <p>Know how to design a feature for a building.</p> <p>Designer Gaudi and artist Ian Murphy.</p> <p>Tools/equipment needed for carving</p> <p>H&S for carving.</p>
	Experiment	Cutting shapes, design ideas, models before making	Designs, cutting shapes, nets, mould making	Drawing, design ideas, cutting shapes.
	Observe	Existing products.	Existing products.	Architecture from Bradford. Designer Gaudi and artist Ian Murphy.
	Make	A phone stand from repurposed pallet wood.	Graphic Chocolate bar box design. Vacuum form chocolate mould.	Soap carving of a designed architectural feature.
	Evaluate	Evaluate work throughout designing and making process. Suggest improvements. How have students overcome challenge in the project?	Evaluate work throughout designing and making process. Suggest improvements. How have students shown responsibility in the project?	Evaluate work throughout designing and making process. Suggest improvements. How have students shown existing architectural styles in their feature?
YEAR 9 CORE (6-week rotation)		Day of the Dead – Phone stand.	Day of the Dead – Phone stand.	Day of the Dead – Phone stand.
	Know	<p>Day of the Dead – The theme of the project will be based on the Mexican celebration and culture</p> <p>H&S recap from Y8</p> <p>How to apply the theme of day of the dead to a product.</p> <p>Making knowledge, how to saw safely and effectively.</p> <p>Keywords for tools and equipment used.</p>	<p>Day of the Dead – The theme of the project will be based on the Mexican celebration and culture</p> <p>H&S recap from Y8</p> <p>How to apply the theme of day of the dead to a product.</p> <p>Making knowledge, how to saw safely and effectively.</p> <p>Keywords for tools and equipment used.</p>	<p>Day of the Dead – The theme of the project will be based on the Mexican celebration and culture</p> <p>H&S recap from Y8</p> <p>How to apply the theme of day of the dead to a product.</p> <p>Making knowledge, how to saw safely and effectively.</p> <p>Keywords for tools and equipment used.</p>
	Experiment	Design, colour and shape.	Design, colour and shape.	Design, colour and shape.
	Observe	Day of the dead artwork will be studied to establish some knowledge about the subject prior to designing.	Day of the dead artwork will be studied to establish some knowledge about the subject prior to designing.	Day of the dead artwork will be studied to establish some knowledge about the subject prior to designing.
	Make	A high-quality phone stand made of MDF using a range of tools and techniques which scholars demonstrated in earlier years. Scholars will apply their design using felt tip and will have opportunity to embellish and develop their phone stand design with extra components and features.	A high-quality phone stand made of MDF using a range of tools and techniques which scholars demonstrated in earlier years. Scholars will apply their design using felt tip and will have opportunity to embellish and develop their phone stand design with extra components and features.	A high-quality phone stand made of MDF using a range of tools and techniques which scholars demonstrated in earlier years. Scholars will apply their design using felt tip and will have opportunity to embellish and develop their phone stand design with extra components and features.
	Evaluate	Visual literacy - Visual elements in Skull designs and prints. Do the	Visual literacy - Visual elements in Skull designs and prints. Do the design/ prints	Visual literacy - Visual elements in Skull designs and prints. Do the design/ prints

		design/ prints have any meanings behind them?	have any meanings behind them?	have any meanings behind them?
YEAR 9 GCSE Art & Design 3D		Basic Skills - Consolidation of KS3 skills.	Basic Skills - Consolidation of KS3 skills.	Basic Skills - Consolidation of KS3 skills.
	A01	Investigate a chosen art and design movement. Develop ideas relating to chosen art and design movement.	Investigate Peter Randal-Page in relation to sculpture project. Investigate Eric Broug in relation to lino printing ceramic.	Investigate a chosen art and design movement. Develop ideas relating to chosen art and design movement.
	A02	Develop ideas, model product prior to final piece.	Experiment with own design ideas for sculpture and ceramic based on the artist's work which has been studied.	Develop ideas, model product prior to final piece. Make a Mold for pouring pewter.
	A03	Record example artwork/design from chosen design movement. Create designs/development for a clock for chosen design movement.	Continuous line drawing Graphite transfer Design ideas Chalk piece. Colour pencil drawing Design ideas using Islamic geometric techniques. CAD.	Record example artwork/design from chosen design movement. Create designs/development for a piece of jewellery.
	A04	Clock inspired by a design movement of the students choosing	Exploring sculpture/ Lino printing ceramic	Jewellery Making (pewter)
YEAR 10 GCSE Art & Design 3D (Was BTEC 3D Design)		Component 1: Portfolio (sustained project.)	Component 1: Portfolio (sustained project.)	Component 1: Portfolio (sustained project.)
	A01	Investigate an existing product speaker.	A chosen contemporary artist.	
	A02	Experiment design ideas relating to product.	Experiment design ideas relating to product. Apply knowledge of a chosen artist to designs to experiment.	
	A03	Record of existing products. Written annotation	Record of artist's work. Written annotation.	
	A04	Foam model	Speaker	
YEAR 11 GCSE Art & Design 3D (Was BTEC 3D Design)		Component 1: Portfolio (sustained project.)	Component 2: Externally Set Assignment. Prep from 2nd Jan. Supervised exam - 10 hours	

*A powerful, knowledge-rich curriculum teaches both **declarative knowledge** (facts; knowing that something is the case; what we think about) and non-declarative or **procedural knowledge** (skills and processes; knowing how to do something; what we think with). There are no skills without bodies of knowledge to underpin them. In some subjects, a further distinction can be made between substantive knowledge (the domain specific knowledge accrued eg knowledge of the past) and disciplinary knowledge (how the knowledge is accrued eg historical reasoning).

Please refer to the DAT Curriculum Principles, published on our website, for further information about how we have designed our all-through curriculum.