Design Technology

Curriculum Principles

By the end of their secondary education, a student of Design Technology at Dixons Broadgreen will:

- Have the knowledge, understanding and skill sets required to succeed in one of the many career paths linked to Design Technology.

- Be resourceful and innovative learners, who can apply their subject knowledge and practical skills to overcome obstacles and barriers enabling them to compete in a rapidly developing industry.

- Have a sense of achievement and success making them resilient learners who are equipped to solve real world problems through high quality solutions, systems and products.

- Know and understand the vital skills and knowledge required to ensure a self-sufficient, independent lifestyle contributing and maintaining a well-balanced and healthy living.

Our uniting 'sentence' is:

> *"The Design Technology department ensured all students; through a curriculum that was engaging, challenging and exciting, achieved to the best of their ability and became resourceful young adults, equipped to solve real life design problems through innovative design and practical application".*

In order to achieve a true understanding of Design Technology, topics have been intelligently sequence based on the following rationale:

- At the core of all lessons is knowledge and understanding. Coinciding with this is practical knowledge and application which provides a tangible learning experience which deepens students' understanding and further builds schema.

- The sequence of content delivered in Design and Technology aids progression and allows for the accumulation of sufficient knowledge and skills needed for future learning, linking to Local, National and Global Industries.

- Following on from the Key Stage 2 programme of study, our schemes of learning are designed to expose students to the relevant subject content and provides opportunities for students to learn above and beyond the prescribed Key Stage 3 programme of study. This is achieved through investigating wider subject contexts via engaging and creative teaching and learning and using real world examples.

- Key Stage 4 builds on the learning from Key Stage 3, delivering the knowledge and understanding and skills sets required for external examinations and Non-Exam Assessment throughout the second year. Schemes of Learning content reflects the subject specifications (including substantial scientific and mathematical content), but also allows students to learn by exploring the content in a diverse manner through a holistic approach. Students embed and articulate practical skills to a high-quality finish. The sequence of learning also allows students to make progress and gain an inside into the world of work in the Hospitality and Catering sector.

The Design Technology curriculum will address social disadvantage by addressing gaps in students' knowledge and skills:

- The aim of the Design Technology curriculum is to educate all our students so that they receive a wide and varied educational experience, that provokes curiosity and fosters their ambitions. This is achieved through a rich and board Key Stage 3 curriculum and a focussed and rigorous Key Stage 4 and 5 curricula.

- Opportunities are provided for students to learn above and beyond the prescribed programme of studies and develop and enhance schema via extracurricular experiences that utilise local industry providers and external stakeholders.

- Design Technology is accessible for students of all abilities. Curriculums 'teach to the top' and scaffold down. All students are exposed to the same content and have the same high expectations of attainment and progress.

- Opportunities are provided for students to learn and explore industries and real-life experiences alongside the completion of the course. Educational visits often take place, allowing all students experiences of the industry first-hand, this could include working alongside a professional chef or visiting a local restaurant to see how front of house and services are provided within the establishment.

We fully believe Design Technology can contribute to the personal development of students at DBA:

- Our curriculum encourages students to learn how to take risks when solving design problems. This builds confidence and enables students to become resourceful and innovative learners.

- Students are encouraged to be principled when considering the impact of design and manufacture on the environment and how it impacts on cultures and the wider society

- It is important that our students are reflective when analysing and evaluating their design ideas or making further recommendations on how to improve products, systems or services.

At KS3, KS4 and KS5, our belief is that homework should be interleaved revision of powerful knowledge that has been modelled and taught in lessons. This knowledge is recalled and applied through a range of low stakes quizzing and practice.

Opportunities are built in to make links to the world of work to enhance the careers, advice and guidance that students are exposed to:

- This is done by working closely with our careers advisors to provide students with opportunities to visit local industry providers and external stakeholders such as Jaguar Land Rover.

- Utilising local and regional educational providers such as 'All about STEM' provides opportunities for our students to experience their learning in the context of real-world jobs and careers.

- Working closely with our local universities also provides a wealth of opportunities for our students to expand their experiences of Design and Technology.

- Students have also been given opportunities to work with chefs in local restaurants to prepare and make their own dishes. As well as Royal Navy, who dedicate a morning with the students to demonstrate how to prepare and make a sufficient, fulfilling, and nutritious meal.

A true love of Design Technology involves learning about various cultural domains. We teach beyond the specification requirements, but do ensure students are well prepared to be successful in GCSE examinations:

- Across all Key stages, students are assessed using both summative and formative assessment techniques. The frequency is designed to consolidate and embed deep learning and ensures students are continually recalling prior knowledge.

- The Design Technology curriculum has been developed so that students regularly have the opportunity to recall, develop and master new concepts and revisit prior learning and practical application.

- A rigorous and challenging Key Stage 3 underpins students' knowledge and learning. Students are exposed to key vocabulary from Year 7 ensuring they become familiar with the technical terminology of Design Technology from the outset. Regular examination questions assess student understanding and exam techniques providing them with the best opportunity to be successful in external exams.

Year 7 Design Technology - Long Term Planning Document 22/23

Week	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Cycle 1	30/08/22	05/09/22	12/09/22	19/09/22	26/09/22	03/10/22	10/10/22	17/10/22	07/11/22	14/11/22	21/11/22	28/11/22	05/11/22	
Notes	All seating plans to be completed		Baseline test Maths and English						07/11/22 student reset	18/11/22 Data and planning day				
	01/09/22 – Year 7 induction Onboarding	Food - Safety rules & standards Health & Safety in Design Technology	Pizza baguette practical – hygiene Metals: Ferrous & Non-Ferrous	Vitamins Practical – Aluminum Key Tag Template & Tin Snips (inc. Demo)	Pasta salad practical Practical – Aluminum Key Tag Stamps & Finishing off Techniques. (Inc. Demo)	Protein & carbohydrates Practical – Aluminum Key Tag (Photograph) Finishing off Techniques add hole. - Complete personal Evaluation.	Tomato soup practical Timbers: Hardwoods & Softwoods.	Fats & sugars Practical – Pine Jigsaw Magnet. Template & Coping Saw (Inc. Coping Saw Demo)	Chicken goujons practical Cycle 1 Assessment – Exam style Question Practical – Pine Jigsaw Magnet. Coping Saw & File. (Recap C.S & Inc. File Demo)	Review/revisit and fill in gaps of knowledge and understanding. C1 Assessment Practical Finishing off Techniques – Sandpaper (Photograph) - Complete personal Evaluation.	Dairy & Key nutrients Timbers – Manufactured Boards Start: Personal Evaluation of Pine Jig saw piece	Bolognese Practical Practical – MDF Wood Joint (Pair Work) Marking out & Coping saw (inc. Coping Saw Demo)	Eatwell Guide Practical - MDF Wood Joint (Pair Work) Coping Saw & File (Inc. File Demo) (Photograph) Complete personal Evaluation.	
Test														
Retest														
Cycle 2	12/12/22	19/12/22	02/01/23	09/01/23	16/01/23	23/01/23	30/01/23	06/02/23	20/02/23	27/02/23	06/03/23	13/03/23	20/03/23	
Notes	16/12/22 Data and planning day		04/01/23 student reset			Y7 Mid-year exams	Y7 Mid-year exams	Y7 Mid-year exams 10/02/23 Dixons Trust Inset Day	20/02/23 student reset		6/03/23 and 07/03/22 Data & planning days			
	Apple crumble practical Polymers – Thermo & Thermoset.	Dress Code Practical – Acrylic Marking out Inc. Line Bend Demo	Cupcakes practical Revisit Polymers Demo Nothing New just review	Decorating cupcake practical Practical – Acrylic (Photograph) Complete personal Evaluation.	Special Diets Material Properties	Menu planning Drawing Techniques - 2d & 3D drawing	Revision Session Drawing Techniques – Isometric Drawing	Summative Assessment Summative Assessment	Food - Safety rules & standards Health & Safety in Design Technology	Pizza baguette practical - hygiene Cycle 2 Assessment – Exam style Question H&S to cover all DT Metals: Ferrous & Non-Ferrous	Vitamins Practical – Aluminum Key Tag Template & Tin Snips (inc. Demo)	Pasta salad practical Practical – Aluminum Key Tag Stamps & Finishing off Techniques. (Inc. Demo)	Protein & carbohydrates Practical – Aluminum Key Tag (Photograph) Finishing off Techniques add hole. - Complete personal Evaluation.	
Test														
Retest														
Cycle 3	27/03/23	17/04/22	24/04/23	01/05/23	08/05/23	15/05/23	22/05/23	05/06/23	12/06/23	19/06/23	26/06/23	03/07/23	10/07/22	17/07/22
Notes		17/04/23 student reset	28/04/23 – Y7 parents evening	01/05/22 May Day				05/06/23 student reset						20/07/23 Data and planning day 21/07/23 End of term
	Tomato soup practical Timbers: Hardwoods & Softwoods.	Fats & sugars Practical – Pine Jigsaw Magnet. Template & Coping Saw (Inc. Coping Saw Demo	Chicken goujons practical Cycle 1 Assessment – Practical – Pine Jigsaw Magnet. Coping Saw & File.	Dairy & Key nutrients Practical Finishing off Techniques – Sandpaper - Complete personal Evaluation.	Review/revisit and fill in gaps of knowledge and understanding. C2 Assessment Timbers – Manufactured Boards	Bolognese Practical Practical – MDF Wood Joint Marking out & Coping saw	Eatwell Guide Practical - MDF Wood Joint Coping Saw & File Complete personal Evaluation.	Apple crumble practical Polymers – Thermo & Thermoset.	Dress Code Practical – Acrylic Marking out Inc. Line Bend Demo.	Cupcake practical Cycle 3 Assessment – Exam style Question Practical – Acrylic (Photograph) Complete personal Evaluation.	Decorating cupcake practical Material Properties	Special Diets Drawing Techniques - 2d & 3D drawing	Menu planning Drawing Techniques – Isometric Drawing	C3 Summative Assessment Summative Assessment
Test														
Retest														

Year 8 Design Technology - Long Term Planning Document 22/23

Week	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Cycle 1	30/08/22	05/09/22	12/09/22	19/09/22	26/09/22	03/10/22	10/10/22	17/10/22	07/11/22	14/11/22	21/11/22	28/11/22	05/11/22	
Notes	All seating plans to be completed								07/11/22 student reset	18/11/22 Data and planning day				
	Onboarding	Safety, hygiene, and cross contamination Health & Safety in Design Technology.	Nutrition & Eatwell Guide Hardwoods & Softwoods.	Chicken Tikka Practical Pine. Marking out	Vitamins Pine. Cutting	Chicken Stir Fry Practical Pine. Router	Cooking Methods Pine. Constructing	Chili Con Carne Practical Polymers: Themo & Thermosets.	Weighing and measuring Acrylic	Review/revisit and fill in gaps of knowledge & understanding. C1 Assessment Metals: Ferrous & Non-Ferrous	Pizza Base Practical Aluminum practical	Pizza Topping Practical Aluminum practical	Environmental Factors Review/revisit and fill in gaps of knowledge & understanding C1 Assessment	
Test														
Retest														
Cycle 2	12/12/22	19/12/22	02/01/23	09/01/23	16/01/23	23/01/23	30/01/23	06/02/23	20/02/23	27/02/23	06/03/23	13/03/23	20/03/23	
Notes	16/12/22 Data and planning day		04/01/23 student reset			Y8 Mid-year exams	Y8 Mid-year exams	Y8 Mid-year exams 10/02/23 Dixons Trust Inset Day	20/02/23 student reset		6/03/23 and 07/03/22 Data & planning days			
	Scones Practical Manufactured Boards	Types of Pastry MDF Practical	Fruit Tart Pastry Practical MDF Practical	Fruit Tart Filling Practical Manufactured Boards	Packaging MDF Practical	Menu Planning Drawing: Oblique	Revision Session Revision Session	Summative Assessment Summative Assessment	Safety, hygiene, and cross contamination Health & Safety in Design Technology.	Nutrition & Eatwell Guide Hardwoods & Softwoods.	Chicken Tikka Practical Pine. Marking out	Vitamins Pine. Cutting	Chicken Stir Fry Practical Pine. Router	
Test														
Retest														
Cycle 3	27/03/23	17/04/22	24/04/23	01/05/23	08/05/23	15/05/23	22/05/23	05/06/23	12/06/23	19/06/23	26/06/23	03/07/23	10/07/22	17/07/22
Notes		17/04/23 student reset 20/04/23 Y8 Parents evening		01/05/22 May Day				05/06/23 student reset						20/07/23 Data and planning day 21/07/23 End of term
	Cooking Methods Pine. Constructing	Chili Con Carne Practical Polymers: Themo & Thermosets.	Weighing and measuring Acrylic	Pizza Base Practical Metals: Ferrous & Non-Ferrous	Review/revisit and fill in gaps of knowledge and understanding. C2 Assessment Aluminum practical	Pizza Topping Practical Aluminum practical	Environmental Factors Review/revisit and fill in gaps of knowledge & understanding C1 Assessment	Scones Practical Manufactured Boards	Types of pastry MDF Practical	Fruit tart pastry MDF Practical	Fruit Tart Filling Practical Manufactured Boards	Packaging MDF Practical	Menu Planning Revision Session	C3 Summative Assessment Summative Assessment
Test														
Retest														

Year 9 Design Technology - Long Term Planning Document 22/23

Week	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Cycle 1	30/08/22	05/09/22	12/09/22	19/09/22	26/09/22	03/10/22	10/10/22	17/10/22	07/11/22	18/11/22	21/11/22	28/11/22	05/11/22	
Notes	All seating plans to be completed								07/11/22 student reset	18/11/22 Data and planning day				
	Onboarding	Health & Safety/HACCP Health & Safety in Design Technology	Beef Burgers Practical Marking Out & Cutting	Key Temperatures/ Food Storage Required Practical Softwood Cutting	Fajita's Practical Timbers & Joining Methods	Nutrition/ Eatwell Guide Required Practical: Lap Joints	Sweet & Sour Practical Required Practical: Lap Joints & Drilling	Unsatisfactory Nutritional Intake PCB & Electronic Components	Enriched Dough Practical Required Practical: PCB	Review/revisit and fill in gaps of knowledge and understanding. C1 Assessment Required Practical: PCB	Sausage Rolls Pastry Practical Modern & Smart Materials	Sausage Rolls Filling Practical Lantern Designs	Cake Methods Lantern Design Development	
Test														
Retest														
Cycle 2	12/12/22	19/12/22	02/01/23	09/01/23	16/01/23	23/01/23	30/01/23	06/02/23	20/02/23	27/02/23	06/03/23	13/03/23	20/03/23	
Notes	16/12/22 Data and planning day		04/01/23 student reset			Y9 Mid-year exams	Y9 Mid-year exams	Y9 Mid-year exams 10/02/23 Dixons Trust Inset Day	20/02/23 student reset		6/03/23 and 07/03/22 Data & planning days		24/03/23 Y9 Parents evening	
	Tray Bake Sponge Practical CAD: 2D Design	Tray Bake Decoration Practical CAM: Laser Cutter	Food poisoning Required Practical: Laser Cutter	Cherry Bakewell Pastry Practical Required Practical: MDF Base	Cherry Bakewell Filling Practical Required Practical: Aluminum Stand	Menu planning Fixtures, Fittings & Assembly	Revision Session Final Product Evaluation	Summative Assessment End of Unit Summative Assessment	Health & Safety/HACCP Health & Safety in Design Technology	Beef Burgers Practical Marking Out & Cutting	Key Temperatures/ Food Storage Required Practical: Softwood Cutting	Fajita's Practical Timbers & Joining Methods	Nutrition/ Eatwell Guide Required Practical: Lap Joints	
Test														
Retest														
Cycle 3	27/03/23	17/04/22	24/04/23	01/05/23	08/05/23	15/05/23	22/05/23	05/06/23	12/06/23	19/06/23	26/06/23	03/07/23	10/07/22	17/07/22
Notes		17/04/23 student reset		01/05/22 May Day				05/06/23 student reset						20/07/23 Data and planning day 21/07/23 End of term
	Sweet & Sour Practical Required Practical Lap Joints & Drilling	Unsatisfactory Nutritional Intake PCB & Electronic Components	Enriched Dough Practical Required Practical: PCB	Sausage Rolls Pastry Practical Required Practical: PCB	Review/revisit and fill in gaps of knowledge and understanding. C2 Assessment Modern & Smart Materials	Sausage Rolls Filling Practical Lantern Designs	Cake Methods Lantern Design Development	Tray Bake Sponge Practical CAD: 2D Design	Tray Bake Decoration Practical CAM: Laser Cutter	Food poisoning Required Practical Laser Cutter	Cherry Bakewell Pastry Practical Required Practical: MDF Base	Cherry Bakewell Filling Practical Required Practical: Aluminum Stand	Menu planning Fixtures, Fittings & Assembly Final Product Evaluation	C3 Summative Assessment End of Unit Summative Assessment
Test														
Retest														

Year 10 Design Technology - Long Term Planning Document 22/23

Week	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Cycle 1	30/08/22	05/09/22	12/09/22	19/09/22	26/09/22	03/10/22	10/10/22	17/10/22	07/11/22	14/11/22	21/11/22	28/11/22	05/11/22	
Notes	All seating plans to be completed								07/11/22 student reset	18/11/22 Data and planning day				
	Onboarding	New & emerging technologies.	New & emerging technologies.	Materials and their working properties.	Materials and their working properties.	Developments in new materials.	Developments in new materials.	Mechanical devices.	Mechanical devices.	Forces and stresses.	Energy generation and storage.	Sources & origins.	Ecological and social footprint.	
Test														
Retest														
Cycle 2	12/12/22	19/12/22	02/01/23	09/01/23	16/01/23	23/01/23	30/01/23	06/02/23	20/02/23	27/02/23	06/03/23	13/03/23	20/03/23	
Notes	16/12/22 Data and planning day		04/01/23 student reset	Y10 Mid-year Exams	Y10 Mid-year Exams			10/02/23 Dixons Trust Inset Day	20/02/23 student reset		6/03/23 and 07/03/22 Data & planning days 09/03/23 Y10 parents evening			
		Stock form, types and sizes.	Using and working with materials.	Specialist techniques and processes.	Specialist techniques and processes.	Scales of Production.	Scales of Production.	Surface treatment & finishes.	Selection of materials or components.	Investigation primary & secondary data.	Environmental. Social and economic challenge.	Work of others.	Design Strategies.	Communication of design ideas.
Test														
Retest														
Cycle 3	27/03/23	17/04/22	24/04/23	01/05/23	08/05/23	15/05/23	22/05/23	05/06/23	12/06/23	19/06/23	26/06/23	03/07/23	10/07/22	17/07/22
Notes		17/04/23 student reset		01/05/22 May Day				05/06/23 student reset						20/07/23 Data and planning day 21/07/23 End of term
	Communication of design ideas.	Protype development.	Tolerances.	Materials Management.	Material Management.	Specialist tools & equipment.	Specialist tools & equipment.	Identifying & investigating design possibilities.	Producing a design brief & specification.	Generating design ideas.	Generating design ideas.	Developing design ideas.	Developing design ideas.	Developing design ideas.
Test														
Retest														

Week	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14
Cycle 1	30/08/22	05/09/22	12/09/22	19/09/22	26/09/22	03/10/22	10/10/22	17/10/22	07/11/22	14/11/22	21/11/22	28/11/22	05/11/22	
Notes	All seating plans to be completed								07/11/22 student reset	18/11/22 Data and planning day Y11 PPE1 Exams	Y11 PPE1 Exams			
	Onboarding	Identifying & investigating design possibilities.	Identifying & investigating design possibilities.	Producing a design brief & specification.	Producing a design brief & specification.	Generating design ideas.	Generating design ideas.	Generating design ideas.	Developing design ideas.	Developing design ideas.	Developing design ideas.	Realising Design Ideas	Realising Design Ideas	
Test														
Retest														
Cycle 2	12/12/22	19/12/22	02/01/23	09/01/23	16/01/23	23/01/23	30/01/23	06/02/23	20/02/23	27/02/23	06/03/23	13/03/23	20/03/23	
Notes	16/12/22 Data and planning day		04/01/23 student reset 05/01/23 Y11 parents evening					10/02/23 Dixons Trust Inset Day	20/02/23 student reset		6/03/23 and 07/03/23 Data & planning days	Y11 PPE2 Exams	Y11 PPE2 Exams	
	Realising Design Ideas	Prototype Manufacture	Prototype Manufacture	Prototype Manufacture	Prototype Manufacture	Prototype Manufacture	Prototype Manufacture	Testing, analyzing & evaluating	Testing, analyzing & evaluating	Testing, analyzing & evaluating	Testing, analyzing & evaluating	Modifications	Modifications	
Test														
Retest														
Cycle 3	27/03/23	17/04/22	24/04/23	01/05/23	08/05/23	15/05/23	22/05/23	05/06/23	12/06/23	19/06/23	26/06/23	03/07/23	10/07/22	17/07/22
Notes		17/04/23 student reset		01/05/22 May Day				05/06/23 student reset						
	Modifications	Core Technical Principles review.	Core Technical Principles review.	Specialist Principles review.	Specialist Principles review.	Design & Making principles review.	Design & Making principles review.	External Exam Revision	External Exam Revision	External Exam Revision	External Exam Revision	External Exam Revision	External Exam Revision	
Test														
Retest														