Design and Technology

Key Stage 3 (Years 7-9)

Our Design and Technology curriculum gives students a broad introduction to the various disciplines covered in any comprehensive Design and Technology course. Students who choose to take any of the D&T suite of subjects beyond Key Stage 3 will have a good grounding on which to build their skills and knowledge at Key Stage 4. Students who do not continue with a D&T subject beyond Key Stage 3 will have acquired personal skills and practical knowledge for life that will serve them beyond their school years and into adulthood.

Throughout Key Stage 3, students will be taught to identify and solve their own problems using a variety of strategies, tools and equipment, all of which are relevant to 21st Century technologies and approaches. When investigating design ideas, students will learn a range of literacy and planning skills, whilst in the designing and making stages, numeracy and the acquisition of practical skills (including CAD/CAM) will form a large proportion of the work. Through analysing a range of design influences and considering the environmental impact of making products, students will acquire an understanding and appreciation of the importance of design within society.

The Key Stage 3 Design and Technology curriculum incorporates investigation, designing, making and evaluating. Above all, it enables students to develop their independence and new skills in a fun but well-structured way. At Gordano School we firmly believe the place and position of D&T in the curriculum is vital in developing fully rounded and educated individuals; students who are equipped with the skills and grounding required for the journey ahead.

We deliver projects in Product Design, Graphic Design, Textiles and Food, through which students will make products and dishes that are relevant to them and the modern world. Our aim is that students will make products and dishes that they will take home and actually use. In this way, we believe that our students are more engaged and motivated to create brilliant outcomes. The table below shows a typical student experience across KS3, although the order in which this happens will vary.

YEAR 7	Lessons per cycle	Project 1	Project 2	Project 3	Project 4	Project 5
Design and Technology	5	Graphic Design - 'Core' Communication Skills	Product Design - Workshop Project (Passive Speaker)	Product Design - CAD/CAM Project (Laser Cut Clocks)	Textiles - Stitch a Selfie	Food – Introduction to Food Preparation and Nutrition

YEAR 8	Lessons per cycle	Project 1	Project 2	Project 3	Project 4
Design and Technology	5	Product Design – Lighting Project	Graphic Design – Chocolate Bar Packaging	Textiles – Pop Art Cushion	Food – The Global Kitchen

YEAR 9	Lessons per cycle	Project 1	Project 2	Project 3
Design and Technology	5	Product/Graphic Design – Bug Hotel	Textiles – Festival Bucket Hat	Food Preparation and Nutrition - Including Food Science

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Key Stage 4 (Years 10-11)

There are four pathways within DT that students can take at KS4 – these are outlined below:

GCSE Design and Technology – Product Design: In Year 10 students will undertake two design and make projects (Pewter Casting and Desktop Hero). With a focus on resistant materials such as wood, metal and plastics, these projects will allow students to develop a full range of practical and design skills that will set them up for their future learning. At the end of Year 10 and throughout Year 11 students will complete an NEA coursework project. Through this, they will get an opportunity to use all the skills acquired from Years 7-10 to independently design and make a product of their choosing. This will rely on excellent investigation, design, making and evaluation skills, that have been the cornerstone of their studies in DT at Gordano School. Students will also prepare for an exam at the end of Year 11. Through the projects and theory lessons we cover in KS4, students will learn about materials and manufacture in the modern world, smart materials and electronic systems, mechanical components and the environmental impact of design.

GCSE Design and Technology – Graphic Design: Students who opt for the Graphic Design route will follow the same learning journey as described above. However, the focus here will be on working with compliant materials such as paper, card and other modelling materials. In Year 10 they will undertake two design and make projects – Funko Pops and Architectural modelling.

GCSE Art and Design (Textile Design): This course will allow you to be innovative in developing new techniques. You will have the opportunity to work with a variety of materials by designing clothing and develop your understanding by exploring ways to decorate and create new concepts and products. Pupils will be taught how to design and make products using a range of modelling, materials and textile skills. This is a very hands on, creative course and through a series of specialised workshops and in-depth artist & designer studies, students will learn a vast range of new decorative and construction techniques. Projects include a Youth Culture Hoodie as well as a longer NEA project and practical exam where students will have a greater degree of flexibility to create products of their choosing.

GCSE Food Preparation and Nutrition: In Year 10 students will study six key themes: food commodities; principles of nutrition; diet and good health; the science of food; where food comes from and cooking and food preparation. Practical sessions will link to these themes, becoming more complex and using a wide range of processes, equipment and ingredients over time. This will equip students with the knowledge, understanding and skills required to cook and apply the principles of food science, nutrition and healthy eating. In Year 11 students will apply the knowledge and skills they have developed to complete two non-exam assessment (NEA) tasks and a written exam. NEA1 is a food science project where the properties of ingredients and processes used in a given product are investigated and explained. NEA2 includes a practical cooking skills test where students will choose a range of dishes to suit a specific scenario. The final written exam covers all areas of the specification.

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Key Stage 5 (Years 12-13)
There are three pathways within DT that students can take at KS5 – these are outlined below:

A Level Design and Technology (Product Design): This creative and thought-provoking course gives students the practical skills, theoretical knowledge and confidence to succeed in a number of careers; especially those in the creative industries. Students investigate historical, social, cultural, environmental and economic influences on design and technology, whilst enjoying opportunities to put their learning into practice by producing products of their choice. Students work in a range of resistant and compliant materials and use a variety of manufacturing methods, usually of their choosing. In this course students are expected to respond to real world design problems and to produce prototype products to solve them.

The course starts with some higher-level drawing, CAD/CAM and modelling skills which prepares students for the NEA. Lessons are then a combination of learning the theory whilst undertaking the NEA at the same time. Students get to identify and write their own briefs and then follow the iterative design process, recording the design journey in their sketchbooks. The whole design process is one of independence and investigation. Students are taught a wide variety of construction and finishing techniques through practical tasks and whole class demonstrations. The single exam at the end of the course requires students to demonstrate their knowledge and understanding of a wide variety of materials, construction methods and design influences. Design and its importance in society is at the heart of the course and students who have a genuine interest in design and making will find this a stimulating, thought-provoking and thoroughly rewarding course.

A Level Fashion and Textile Design: This refreshing new course encourages candidates to fulfil their creative ability. Students will have the opportunity to work with a wide range of fabrics and components used to design and create fashion and textiles products. They will be encouraged to develop their creativity through presentation techniques in 2D and 3D forms. This course is largely practical and sketchbook work with limited theory.

There are 2 main components of study. In Component 1 Candidates will undertake a major in-depth critical, practical and theoretical project, based on a theme that has personal significance. This will consist of a sketchbook including research, designer studies and design & make activities. In Component 2 there will be a preparatory study period of sketchbook work with an externally set assignment and stimuli. Students select one and create a personal response piece. Also there is a 15 hour period of sustained focus work (practical exam). Students to show planning, outcomes and complete under supervised conditions. Candidates will be required to present their work.

Level 3 Food Science and Nutrition: This course considers the science behind food production and the impact of nutrition on dietary health and well-being. When looking at nutrition, students will examine the relationship between diet and health and consider how the foods we eat can be used to prevent and manage disease. Food science focuses on food production, safety, processing and innovation. Application of knowledge is vital for this course, and as part of this students will learn to cook a wide range of dishes using complex techniques and a variety of tools in order to demonstrate both scientific and nutritional understanding. There is also consideration of current issues such as sustainability, global production and ultra-processed foods.

There will be four assessment threads: nutritional needs across the life stages, developing practical food production skills, principles of food hygiene and food safety in food production and experimenting to solve food production problems. Assessment will be spread across the two years of study with two written exams and two non-exam assessment (NEA) tasks.