

Design & Technology

Design & Technology (D&T) is an area of study that focuses on planning, designing and creativity. The subject gives all students the opportunity to learn how to make things, repair products and discover solutions to different problems. This subject is one of the most progressive on the national curriculum, mainly due to the developments in technology and the rapidly changing world we live in. Technology is having an impact on the whole planet and we need to prepare our students for the developments they will encounter. Students in Design & Technology develop designing and making skills in addition to learning about electronics, computing, engineering, CAD, CAM, robotics, materials and textiles technology. They also develop business critical skills through problem-solving, innovation and teamwork.

Throughout the Key Stage 3 course (Years 7 – 9), we aim to give all students a basic level of knowledge by helping them to be more creative, resilient, work independently, in groups and develop problem solving skills. These skills are transferable to other subjects and are all skills which will assist these children as they progress through the school and onwards.

In both Key Stages 3 and 4, students develop practical skills, creative skills and a knowledge of technology that will help prepare them for other academic subjects and their future. The course helps students to be more considerate of environmental impacts and the technological changes in the world they will encounter. Students are encouraged to work independently, develop problem solving skills and understand the process of design. The Key Stage 4 D&T course helps to develop some of the important skills, techniques and knowledge required for those students who intend to progress onto Key Stage 5. The course also develops the skills to lead into apprenticeships or specific college courses that focus on practical and creative skills.

Throughout Key Stages 3 and 4, we intend to deliver a wide curriculum giving students the chance to explore different areas of Design & Technology. The children develop and practise new skills and we aim to ensure that all students are confident in the following areas

- Help students to develop a variety of creative and practical skills through working with different techniques and materials
- Gain an understanding of designing, making and evaluating with a range of materials
- Develop technical knowledge in mechanical systems and properties of materials.
- Give students the opportunity to learn skills in cookery and be able to cook a range of predominantly savoury dishes.
- Develop an understanding of nutrition and health.
- Learn different techniques and skills in the kitchen.
- Understand about ingredients, their source, seasonality and the characteristics of the ingredients.
- Help to prepare students for an increasingly technical world.
- Gain awareness and understanding of the following factors
 - History of design
 - Social
 - Cultural
 - Environmental
 - Economic
- Further develop creative skills and techniques through, designing, making and evaluating.
- Prepare students to progress into apprenticeships or full-time career in creative and practical industries.
- Prepare students to progress into A Level course in product design.

Teaching Design & Technology is very different to other subjects. It focuses on so many different skills. Those who find creative subjects difficult can still excel in Design & Technology through the construction, engineering, science and mathematical elements of the subject. Those who are creative can work more with designing and manufacturing. The course develops students to work both with function and form and our aim as a department is to help students to develop skills in both of these areas.

Year 11 Design & Technology

Term One

Content of study	Section 2 and 3 NEA
What are the aims and objectives of this term?	Year 11 will be working on their NEA throughout this term. Students need to be completing a comprehensive design brief and a comprehensive Specification which is justified. They will then move onto section 3 Design ideas where they will create a range of ideas using a variety of techniques to communicate.
What previous knowledge is required?	Students will have worked with design briefs and specifications through KS3 and they will have produced design ideas and have learnt about the importance of annotation.
How will this term's content help with future learning?	The work completed in this term is part of the NEA awarded for the final GCSE section 2 and 3 is worth 15% of the final grade.
Resources	Students who wish to develop further knowledge on the areas of study covered in Year 10 DT can research areas on the link below. ENGINEERING - DESIGN AND TECHNOLOGY (technologystudent.com)
Links to the national curriculum/specification	GCSE Design and Technology Specification Specification for first teaching in 2017 (aqa.org.uk) 4.4.4.2 – Producing a design brief and specification 4.4.4.3 – Generating Design ideas
Assessments	Students will be formally assessed on page 5 of the NEA (design brief and specification) they will also be formally assessed on three pages of design ideas (pages 6,7,8).

Term Two

Content of study	Section 4 NEA
What are the aims and objectives of this term?	In term 2 students continue with the NEA and work on section 4 of the project, developing design ideas. Through this section students will produce models, diagrams, CAD 2D and 3D and sketches.
What previous knowledge is required?	Students will need to use their practical knowledge and understanding of developing a product. They need to have prior knowledge of manufacturing so they can apply this knowledge to their development work.
How will this term's content help with future learning?	The development section is 10% of the final GCSE grade.
Resources	Students who wish to develop further knowledge on the areas of study covered in Year 10 DT can research areas on the link below. ENGINEERING - DESIGN AND TECHNOLOGY (technologystudent.com)
Links to the national curriculum/specification	GCSE Design and Technology Specification Specification for first teaching in 2017 (aqa.org.uk) 4.4.4.4 – Developing design ideas
Assessments	Students will be formally assessed on pages 9,10,11,12,13 of the NEA (development pages and manufacturing specification).

Term Three

Content of study	Section 5 of NEA
What are the aims and objectives of this term?	Section 5 is where the students make their product
What previous knowledge is required?	Students need to understand many different processes and manufacturing techniques to enable them to make their product.
How will this term's content help with future learning?	The practical elements in this section of the NEA is 10% of the final GCSE grade.
Resources	Students who wish to develop further knowledge on the areas of study covered in Year 10 DT can research areas on the link below. ENGINEERING - DESIGN AND TECHNOLOGY (technologystudent.com)
Links to the national curriculum/specification	GCSE Design and Technology Specification Specification for first teaching in 2017 (aqa.org.uk) • 3.1.6 Materials and their working properties • 3.2.5 Using and working with materials • 3.2.8 Specialist techniques and processes • 3.3.7 – 3.3.11 Specialist material knowledge
Assessments	Students will be assessed on their practical skills, they also need to evidence quality control and evidence the manufacturing process. This is 10% of the final GCSE grade.

Term Four

Content of study	Section 6 NEA
What are the aims and objectives of this term?	In term 4 students will be working on section 6 of the NEA.
What previous knowledge is required?	Students need an understanding of how to evaluate their work. They will have done this in KS3 but also have experience of writing conclusions throughout the GCSE course.
How will this term's content help with future learning?	This section will go towards their final GCSE grade and is worth 10% of the final mark.
Resources	Students who wish to develop further knowledge on the areas of study covered in Year 10 DT can research areas on the link below. ENGINEERING - DESIGN AND TECHNOLOGY (technologystudent.com)
Links to the national curriculum/specification	GCSE Design and Technology Specification Specification for first teaching in 2017 (aqa.org.uk) • 4.4.4.6 – Analysing and Evaluating
Assessments	Students need to complete 3 pages of evaluation work which goes towards their final GCSE grade. It is 10% of the final mark.

Term Five

Content of study	Revision and preparation for the examination
What are the aims and objectives of this term?	In term 5 we cover preparations for the exam. Students recap on key knowledge and the lessons give the children the opportunity to learn how to apply this knowledge through exam questions. Theory content: • Sustainability

	• Ergonomics • Aesthetics • Analysis of products • Specifications • Social issues • Maths questions • Graphs and Charts analysis • Drawing techniques
What previous knowledge is required?	All knowledge that has been learnt through the course so far will need to be revised and revisited in preparation for the examination. Most areas will be covered in lessons but some previous knowledge will be revised at home.
How will this term's content help with future learning?	This unit is important to prepare the students for the examination and the content will also be important for students who are moving on to study A Level courses in DT.
Resources	Students who wish to develop further knowledge on the areas of study covered in Year 10 DT can research areas on the link below. ENGINEERING - DESIGN AND TECHNOLOGY (technologystudent.com)
Links to the national curriculum/specification	GCSE Design and Technology Specification Specification for first teaching in 2017 (aqa.org.uk) All areas of the specification will be covered.
Assessments	Students will have their formal assessment at the end of this term when they sit their final GCSE examination. This is 50% of the final grade.