



DESIGN TECHNOLOGY

Why is the study of Design Technology important?

Design Technology is a valuable subject for all to study whether you are practically skilled or have never engaged in any creative pathways outside of school. The wider benefits of Design Technology education include the building of confidence and resilience, self-esteem, a sense of achievement and the building of cultural capital.

Design Technology trains your brain to think holistically, to imagine products in three dimensions and consider how your creative ideas could be realised. Design Technology helps you build confidence and resilience. By studying Design Technology you will build skills and become able to realise practical abilities that you will use throughout your life. Design Technology provides a modern and relevant means to explore cultures of the past, present and future; to prepare you for life in a modern and ever-changing world. Studying Design Technology develops critical thinking and makes you a more discerning consumer. You will have a greater appreciation of the environmental impact of our decisions and the need for us to create sustainable solutions to problems.

What skills will the study of Design Technology teach you?

Studying Design Technology will teach you the skills to apply your creativity and knowledge to a series of applied practical projects. You will build your cultural capital, through studying design through history, creating products for a variety of audiences, considering safe working practices, industry standards and regulations. You will be able to approach challenges with confidence, engaging safely with a range of media including timber, plastics, metals and electrical components. Participating in Design Technology will develop your problem solving skills as you approach the challenge of creating unique products. You will learn resilience, persisting with challenging tasks to create high quality products. You will develop your analytical skills as you review existing products as well as your own pieces. You will become more evaluative as you scrutinize and test your products.

Design Technology will teach you to...

- Develop creative ideas into practical solutions using research to inform your design.
- Apply practical workshop skills to manipulate a variety of resistant materials.

- Apply literacy and numeracy knowledge in practical situations.
- Have a sound understanding of safe working practices and be able to work safely with a wide range of hand and machine tools.
- Develop your awareness of environmental, social, historical, commercial and consumer issues
- Evaluate the effectiveness of your work and develop your skills and knowledge over time
- Express your ideas within a group during collaborative tasks

What will you know and understand from your study of Design Technology?

Through your study of Design Technology, you will learn about a wide variety of materials, tools and machines and you will know and understand how to use them skilfully and safely. You will know how to apply mathematical and scientific principles to a variety of practical applications. You will understand the influences of design trends through history and how technology has changed the world. You will know about modern technologies and understand how these are being utilised to reduce our negative impact on the natural environment. You will understand how products are developed to meet the needs of different users and how marketing influences customers.

What will learners know and understand from their study of Design Technology?

- Materials have a wide range of properties and need to be chosen thoughtfully
- The design process relies on research, creativity, development and testing
- Design Technology pulls together discrete knowledge from many other subjects to solve real problems.
- There are many different design movements which have influenced the modern world
- Design is an opportunity to reduced our environmental impact
- How to become a more discerning consumers

How does your study of Design Technology support your study in other subjects?

Design Technology develops a number of transferable skills that will support your study of other subjects. Design Technology will develop your confidence, resilience, problem solving and visual communication skills, which will help you in **all** of your other subjects. Design technology creates inquisitive and discerning students who question the world and seek to understand it better. Design Technology will give you an opportunity to work in a practical environment, applying

and reinforcing your mathematical and scientific knowledge. When developing products you will consider the social and environmental impacts of your decisions, supporting your learning in geography.

When learning about design movements and the evolution of modern technologies, Design Technology will support history lessons. The opportunity to be creative can lead to improved well-being, supporting your emotional needs throughout school, and leading to a fulfilling career.

How can you deepen your understanding of Design Technology?

You will also have the opportunity to deepen your understanding of Design Technology through extracurricular opportunities, where you can continue to develop your creative and practical skills through projects such as jewellery making, Christmas decorations or bird box building.

During enrichment clubs, you may have the opportunity to work with students from other year groups to share ideas, critique each other's work and collaborate.

There may also be an opportunity to participate in Design Technology trips to local manufacturing firms, or to other locations appropriate to the annual contextual challenge (coursework project) brief. Occasionally, there will be opportunities to enter national or Trust competitions to gain additional recognition for your work.

How are you assessed in Design Technology?

Throughout Years 7-10 the Design Technology is assessed using the following assessment objectives which ensure that you can cumulatively build your subject understanding in preparation for each stage of study. There are 6 assessment points each year that we term Praising Stars©. We assess how students at their current stage of study are on track to reach their end of stage targets which are formulated on aspirational expectation from their KS2 starting points. We make an informed prediction from our holistic assessments based on our subject mapping of expectation across the Design Technology curriculum.

Key Assessment Objectives

The 4 key assessment objectives in Design Technology are:

AO1 – Identify, investigate and outline design possibilities to address needs and wants

AO2 – Design and make prototypes that are fit for purpose

AO3 – Analyse and evaluate:

- design decisions and outcomes, including for prototypes made by yourselves and others
- wider issues in design and technology

AO4 – Demonstrate and apply knowledge and understanding of:

- technical principles
- designing and making principles

How can Design Technology support your future?

Beyond school and qualifications; the skills and knowledge gained through studying Design Technology will stay with you for life. Whether it is being able to engage in practical tasks around the home; being a more discerning consumer; or using your applied skills as part of a successful career; a qualification in Design Technology will always be valuable and will give you a greater knowledge and understanding of the world.

Many students go on to study design subjects at level 3 (A levels, BTECs etc.) and university. Apprenticeships are offered at all levels and are often a good way to continue developing practical hands-on skills alongside academic study. Employers really value applicants who have a broad knowledge and apply their knowledge creatively to real-life situations and challenges.

Industries that value the study of Design Technology include:

- Modern Manufacturing
- Product design and development
- Packaging design
- Graphic design
- Marketing and merchandising
- Automotive/Aerospace
- Web design/build/maintenance
- Games/App development

- Manual trades/building
- Computer Aided Design (CAD)
- Engineering
- Architecture
- Interior design
- Jewellery design
- Education
- Exhibition/Staging

DT CURRICULUM PROGRESSION OVERVIEW including Food at KS3 Outwood Academy Hasland Hall

	YEAR 7 2 lessons a week ½ a year in the Design workshop 2 lessons ½ a year in Food 1 lesson ½ a year in Textiles 1 lesson	YEAR 8 ½ a year in the Design workshop ½ a year in Food	YEAR 9 1 lesson a week ½ a year in the Design workshop ½ a year in Food	YEAR 10	Year 11
Autumn 1	D&T “Pop Up Card Project” Students develop understanding of paper and board and the mechanics involved in creating a Pop UP. Food Introduction to cooking, using an oven and basic knife skills through a range of practicals, including coleslaw,	D&T ‘Memphis’ Clock Project Design history 1980s. Application of colour theory. Construction of geometric shapes. Marking out plastics and metals. Food Focus is on nutrition this year.	D&T Lit box Project Product analysis. Design specification. Designing for others. Isometric drawing. Using CAD software. Sophisticated wood joining techniques.	Contextual Challenge Creating a planter Skills to produce 4 different quality joints , decorate and produce a vacuum formed liner.	NEA Specification and research concluded. Designs and model making

	<p>ratatouille, crumble and fresh fruit salad.</p>	<p>Students begin by making stir fry to refresh basic skills. Before looking at ways to add nutrients to everyday dishes. Students will make a range of dishes including carrot cakes, pizza wheels and pasties with homemade pastry.</p>	<p>Marking out, cutting and shaping timber.</p> <p>Theory Topics 3D drawing techniques. Sources of timber.</p> <p>Food Closer look at fats, carbohydrates and the making of higher skill products through theory and practical work. Students will look at food poisoning, choosing and making products healthier as well as beginning to look at a range of dietary groups.</p>		
Autumn 2	<p>D&T 'USB Bug' Project Design presentation skills. Identification and consideration of user needs. Introduction to workshop safety. Thermoforming plastics. Introduction to electrical components. Soldering a circuit board. Decorative finishes. Cutting, shaping and finishing manufactured board. Evaluating products.</p>	<p>D&T Cutting, shaping and finishing plastics and metals. Using stock components. Evaluating products.</p> <p>Food Protein and meat and its alternatives is the focus for the second part of the term.</p>	<p>D&T <u>Core knowledge paper and board, plastics, timber and electronics</u></p> <p>Solder a circuit board Insert into an item of recycled packaging</p> <p>Theory topics Core electronics and systems</p>	<p>Contextual Challenge Timber equipment and processes. Paper and board creating a lit scene Product analysis Initial design ideas. Review of design ideas. Development and modelling.</p> <p>Core Theory Topics Electronic systems</p>	<p>NEA development of designs and Making</p>

	<p style="text-align: center;">Food</p> <p>Continue to work on basic skills with a closer look at staple foods through a range of practicals. Including scones, breads, cakes.</p>		<p>Students create a layer out of each material before assembling and use led lighting to light the project</p> <p style="text-align: center;">Food</p> <p>Students will continue to look at dietary groups and consider meal choices and alternatives that may be necessary.</p>	<p>Contextual Challenge Creating a T shirt design using smart materials</p> <p>Theory Topics Textiles Metals Modern and Smart materials</p> <p>Full Mock Examination Core and timber knowledge</p>	
Spring I	<p style="text-align: center;">D&T</p> <p>Introduction to laser cutting. Development of workshop safety. Marking out timber. Simple wood joining techniques. Cutting, shaping and finishing timber. Finishing plastic. Using stock components.</p> <p style="text-align: center;">Food</p> <p>Continue to work on basic skills with a closer look at staple foods through a range of practicals. Including pasta, potato and rice</p>	<p style="text-align: center;">D&T Skill of creating a joint in wood</p> <p>Dimensioning drawings. Marking out timber. Complex wood joining technique. Cutting timber. Students design and cut out a shape before adding a joint through the centre. The item can be interlocked to create a final piece.</p> <p style="text-align: center;">Food</p> <p>Design and make a pasta dish using a sauce.</p>	<p style="text-align: center;">Metal basket Project</p> <p>Soldering enamelling shaping and weaving</p> <p>Theory topic Metal</p> <p style="text-align: center;">Food</p> <p>Work in this area is completed with a collaborative kitchen brigade project where students work together to create a production line.</p>	<p>Contextual Challenge Creating a Child's shelf Marking out, cutting and shaping materials. Assembling and finishing materials</p> <p>Theory Topics Choosing and reviewing a final idea. Planning manufacture. Cutting list. Marking out, cutting and shaping materials.</p>	<p>NEA evaluation completed Work handed in by the end of January</p> <p style="text-align: center;">Revision</p> <p style="text-align: center;">Focus on Timber</p>

Spring 2				<p>Contextual Challenge Assembling and finishing materials. Testing and Evaluation.</p> <p>Theory Revision Timber and core, all topics. Exam technique. Practice exam questions</p>	<p>Revision</p> <p>Focus on Core Materials</p>
Summer 1				<p>Theory Revision Timber and core, all topics. Exam technique. Practice exam questions</p>	
Summer 2				<p>GCSE NEA task released</p> <p>Research into existing products and target market</p>	