

Curriculum Aims and Purpose

“Design is not just what it looks like and feels like. Design is how it works.”

Steve Jobs, co-founder of Apple, Inc

Our intention is to help students develop through the study of Design & Technology, a range of skills which can be transferred into many real-world situations. While learning in a practical manner, students will build up creativity, problem solving, planning, virtual modelling, and evaluation skills to become independent and resourceful. In a safe learning environment, they will build the confidence to take risks and learn from mistakes and develop resilience while understanding developments in design and technology, its impact and effect of products on individuals, society, and the environment.

Through engaging and challenging lessons students will learn to enjoy learning in subjects which foster and promote interests for later life and lead to employability and success in a whole range of careers.

How our Curriculum inducts students into the discipline of the subject:

The design and technology curriculum serves as a gateway for students to immerse themselves in the discipline by fostering a hands-on approach. Through project-based learning and practical applications, students engage with real-world problems, honing both their creative thinking and technical skills.

This immersive experience instils a deep understanding of design principles and technological processes, cultivating a solid foundation for future exploration and innovation in the field.

Year 7 Overview

Learners delve into the fundamentals of Design and Technology.

Please note that this is on a rotation and students' study this at various times in the year, depending on which class they are in.

Rotation	Focus
Resistant Materials	<p>Using creativity and imagination pupils will design and make an acrylic clock based upon a given design movement.</p> <p>Health And Safety Learners will be shown then demonstrate they understand and can use the tools within the workshop safely and correctly, learners will be given instruction on: draw files, coping saws, pillar drill's, disk sanders, sandpaper, and appropriate PPE (personal protective equipment)</p> <p>Design movements / initial design ideas Learners will be introduced to prominent design movements from the past through a design brief. Learners will use the new knowledge gained about each movement to create original design for each.</p> <p>Design Development Learners will choose a design to develop further to create a final design! This will be taken from a design concept to a prototype in the modelling stage.</p> <p>Card Modelling Learners will model their concept in card allowing it to be seen visually and in 3D before moving onto the making stage, this allows learners to identify and solve their own design problems.</p> <p>Making Learners take what they have learnt from modelling to produce a working product out of acrylic. Gaining knowledge of working with plastics and Deeping the understanding of how to use tool and equipment to produce a design movement inspired clock.</p> <p>Evaluating test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.</p>
Graphics	<p>Using creativity and imagination pupils will design a chocolate bar brand focusing on the graphics.</p> <p>Fonts Theory Learners will be shown then demonstrate they understand the four main fonts used in graphic design (Serif, Sans Serif, freehand, Decorative)</p> <p>Colour Theory</p>

	<p>Learners will develop understanding of colour and its use across graphic design, contrasting, complementary and hue will be explored.</p> <p>Computer Aided Design An introduction to CAD will allow learners to develop design further and show an understanding of how they take a hand drawing and enhance using CAD.</p> <p>Logos and Brands Learners will develop their own brand/logo allowing them to put the knowledge taught into practice.</p> <p>Nets Learners develop their brand/ logos to create a range of packaging while learning how net form a 3d shape in the real world.</p>
<p>Cooking and Nutrition</p>	<p>Eat a Rainbow Project</p> <p>Health And Safety Learners will be shown then demonstrate they understand and can use the tools and equipment within the food room safely and correctly and understand food hygiene and pathogenic bacteria.</p> <p>Healthy Eating / Nutrition Learners will explore what healthy eating is and the difference from nutrition, they will use the Eatwell guide to understand, carbohydrates, fruits and vegetables, proteins, dairy and oils & spreads and the role they play within the diet.</p> <p>Food Science Demonstrations will explore the functional properties of food and how it changes when cooking.</p> <p>Making Rainbow Salad, Rocky Road, Savoury Pinwheels, Bread, and Pizza.</p>

<p>Homework</p> <ul style="list-style-type: none"> • DT will Set 4 homework's throughout the rotation. • Homework will be a printed sheet; learners will have 2 weeks to complete. • No more than 30 minutes should be spent of each piece.

<p>Assessment:</p> <p>Learners will be assessed on design, specification, making, and evaluation throughout the rotations</p>
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Year 8 Overview

Learners deepen their understanding of the design process (Identify, research, imagine, plan, create, test, evaluate, improve)

To become more independent and build upon skills and knowledge across the subjects.

Please note that this is on a rotation and students' study this at various times in the year, depending on which class they are in.

Rotation	Focus
Resistant Materials	<p>Using creativity and imagination pupils will design and make a pencil box.</p> <p>Heath And Safety Learners will be shown then demonstrate they understand and can use the tools within the workshop safely and correctly, learners will be given instruction on: draw files, coping saws, pillar drill's, disk sanders, sandpaper, and appropriate PPE (personal protective equipment)</p> <p>Making Learners develop upon previous learning and concentrate on accuracy while working with wood. Gaining knowledge of working with woods and Deeping the understanding of how to use tool and equipment to produce a pencil box with a basic wood joint.</p> <p>Evaluating Test, evaluate and refine their ideas and products against a specification, taking into account the views of peers.</p>
Graphics	<p>Learners will design and make a shadow box light.</p> <p>Initial design ideas Learners will research a develop designs from a specification, learners will demonstrate original ideas to create a 3D nature themed image.</p> <p>Design Development Learners will chouse a design to develop further to create a final design! This will be taken from a design concept to Cad drawing.</p> <p>CAD Developing on skills learnt previously, Learners will draw their 3D nature images on CAD ready to be laser cut on plywood.</p> <p>Making Learners solder their own dark activated colour changing nightlight circuit board ready to be inserted into their 3D nature scene.</p> <p>Evaluating Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.</p>

Cooking and Nutrition

Keeping Food Safe Project / Farm to Fork Project

Heath And Safety

Year 8 students will develop their understanding of health and safety in the food room and explore microorganisms in a food context. They will learn how to safely store ingredients and the importance of doing so.

Seasonality / food choices

students will start to explore the moral reasons behind food choice alongside the provenance of foods, focusing on seasonality, farming/fishing methods and Genetically Modified foods.

Making

students to develop their practical skills further with the following dishes: Seasonal Muffins, Tuna Pasta Salad and Fresh Egg Pasta, Cheesecake and Creamy Leek and Tarragon Chicken. There is an emphasis on multi-tasking and adaptation of recipes within this project. Elements of food science will continue to be taught during teacher led demonstrations, with cross contamination being an area of importance as they are introduced to using high risk foods.

Homework

- DT will Set 4 homework's throughout the rotation.
- Homework will be a printed sheet; learners will have 2 weeks to complete.
- No more than 30 minutes should be spent of each piece.

Assessment:

- Learners will be assessed on design, specification, making, and evaluation thought out the rotations

Year 9 Overview

Learners become confident and independent in the design process (Identify, research, imagine, plan, create, test, evaluate, improve)

Learners will be given a range of design problems to overcome from specifications.

Please note that this is on a rotation and students' study this at various times in the year, depending on which class they are in.

Rotation	Focus
Resistant Materials	<p>Building on knowledge and skills developed in previous years learners will focus on independent practical skills while working with highly complex shapes. Students will independently design and create a desk organising device which will be based on the Bauhaus design movement.</p> <p>Health And Safety Learners will be shown then demonstrate they understand and can use the tools within the workshop safely and correctly, learners will be given instruction on: draw files, coping saws, pillar drill's, disk sanders, sandpaper, and appropriate PPE (personal protective equipment)</p> <p>Design movements / initial design ideas Learners will add the Bauhaus design movement to their knowledge while designing a desk tidy.</p> <p>Design Development Learners will choose a design to develop further to create a final design! This will be taken from a design concept to product.</p> <p>Making Learners will work with plywood to create a desk tidy with storage, they will work on finishing techniques using acrylic paint to make designs become reality.</p> <p>Evaluating Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.</p>
Graphics	<p>Learners will be given current real life architecture problem. we learn about the work of architects all over the world and use this to help them solve an architectural problem.</p> <p>Design Learners will use the design styles of a range of architects to create a unique and original design for a building suitable to solve the problems identified in the brief.</p> <p>CAD Learners will be introduced to more complex modelling software to create a realistic 3D CAD model of their buildings, allowing learners to independently solve problems and change design accordingly.</p>

	<p>Card Modelling Learners will use CAD modelling to help them develop a card model of the building designed to create a 3D card version of their building.</p> <p>Evaluation Test, evaluate and refine their ideas and products against a specification, taking into account the views of intended users and other interested groups.</p>
<p>Cooking and Nutrition</p>	<p>World Foods Project</p> <p>World foods Learners will fly around the globe learning different cultures and factors that affect the food we eat such as religion, climate, seasonality and ethics.</p> <p>Making Learners will build on previous practical skills learnt, to develop more complex dishes and while introducing them to food from around the globe, learners will make: Welsh Cakes, Spring Rolls, Enchiladas, Tiramisu and Vegetable Curry.</p>

<p>Homework</p> <ul style="list-style-type: none"> • DT will set 4 homeworks throughout the rotation. • Homework will be a printed sheet; learners will have 2 weeks to complete. • No more than 30 minutes should be spent on each piece.
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<p>Assessment:</p> <ul style="list-style-type: none"> • Learners will be assessed on design, specification, making, and evaluation throughout the rotations

Year 10 Overview (AQA GCSE Design and Technology)

GCSE Design and Technology will prepare students to participate confidently and successfully in an increasingly technological world. Students will gain awareness and learn from wider influences on Design and Technology including historical, social, cultural, environmental, and economic factors. Students will get the opportunity to work creatively when designing and making and apply technical and practical expertise.

Our GCSE allows students to study core technical and designing and making principles, including a broad range of design processes, materials techniques, and equipment. They will also have the opportunity to study specialist technical principles in greater depth.

Half Term	Focus
1	<p><i>New & Emerging technologies</i> Understand the impact of new and emerging technologies on contemporary and potential future scenarios in relation to the following areas: Industry, Enterprise, sustainability, people, culture, society, environment, and production techniques.</p> <p><i>Energy Generation and storage</i> understand how energy is generated and stored and how this is used as the basis for the selection of products and power systems. Areas covered: Fossil fuels, nuclear power, renewable energy, energy storage systems.</p> <p><i>Specialist tools, equipment, techniques, and processes</i> How to select and use specialist tools and equipment, including hand tools, machinery, digital design, and manufacture, appropriate for the material and/or task to complete quality outcomes. How to use them safely to protect themselves and others from harm. How to select and use specialist techniques and processes appropriate for the material and/or task and use them to the required level of accuracy in order to complete quality outcomes.</p>
2	<p><i>Developments in new materials</i> learners should be aware of developments in new materials. Modern materials, smart materials, composite materials, technical textiles.</p> <p><i>Systems approach to designing.</i> Inputs, processes, outputs</p> <p><i>The work of others</i> learners should investigate, analyse, and evaluate the work of past and present designers and companies to inform their own designing.</p>
3	<p><i>Mechanical devices</i> different types of movements, changing magnitude and direction of force</p>

	<p><i>Materials and their working properties</i> Learners should know and understand the categorisation of the types and properties of the following materials. Papers and boards, Natural and manufactured timbers, metals and alloys, polymers, textiles</p> <p><i>Environmental, social, and economic challenge</i> The environment, social and economic challenges that influence design and making. How the following might present opportunities and constraints that influence the processes of designing and making:</p> <ul style="list-style-type: none"> • deforestation • possible increase in carbon dioxide levels leading to potential global warming • the need for fair trade.
4	<p><i>Specialist technical principles</i> In addition to the core technical principles, all learners should develop an in-depth knowledge and understanding of the following specialist technical principles:</p> <ul style="list-style-type: none"> • selection of materials or components • forces and stresses • ecological and social footprint • sources and origins • using and working with materials • stock forms, types, and sizes • scales of production • specialist techniques and processes • surface treatments and finishes.
5	<p><i>Scales of production</i> Learners should be able to select materials and components considering scales of production and referencing the processes.</p> <ul style="list-style-type: none"> • prototype • batch • mass • continuous. <p><i>Stock forms, types and sizes</i> Learners should know and understand the different stock form types and sizes in order to calculate and determine the quantity of materials or components required. Papers and boards, Natural and manufactured timbers, metals and alloys, polymers, textiles</p>
6	<p><i>NEA (non-exam assessment)</i> Non-exam assessment will contribute towards 50% of the student’s overall mark. It will consist of a working prototype and a concise portfolio of approximately 20 pages of A3 paper.</p>

Homework

- Homework will be a printed sheet; learners will have 2 weeks to complete.
- No more than 30 minutes should be spent of each piece.

Useful resources:

- <https://www.bbc.co.uk/bitesize/examspecs/zby2bdm>
- https://technologystudent.com/despro_flsh/NEW_GCSE3.html
- <https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552>

Assessment

Assessments will a mixture of mock test papers and project work to reflect how the GCSE is built.

Year 10 Overview (Hospitality)

WJEC Level 1/2 Vocational Awards enable learners to gain knowledge, understanding and skills relating to a specific vocational sector. In addition to development sector specific knowledge and understanding, these qualifications also.

support learners to develop the essential employability skills that are valued by employers, further and higher education.

Half Term	Focus
1	<p>At the start of year 10 students are going to be introduced to the course content. They will begin to look at the structure of the hospitality and catering industry alongside practical lessons that will involve high skill dishes to develop their skills.</p> <p>Students will begin to focus on the importance of nutrition with an emphasis the Eatwell Guide, the function of nutrients and the differing needs of specific groups. This will lead into their NEA work in Year 11. They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p>
2	<p>Students are going to continue looking at the structure of the hospitality and catering industry with a focus on the different types of jobs and the environments / conditions in which they work in.</p> <p>They will continue to explore nutrition, with a focus on how cooking methods can impact on nutritional values.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p> <p>Students will explore the factors that contribute to the success of the hospitality and catering industry.</p> <p>They will also be introduced to the health and safety aspects of the hospitality and catering industry including the laws and responsibilities of food handlers.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p>
3	<p>Students will continue to explore the health and safety aspects of the hospitality and catering industry.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p>

	<p>Students will look at the various factors that affect food choice such as seasonal issues, skills, cost, and environmental issues which links to the NEA work in Year 11.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p>
4	<p>Students will continue exploring factors that affect food choice, with a focus on organoleptic factors.</p> <p>They will begin to look at the operation of the front and back of house, including workflow, stock control and dress codes along with how to meet customer requirements.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p> <p>Students will develop their understanding of food hygiene from KS3 and look at food related causes of ill health. They will focus on the role of the Environmental Health Officer and the consequences of poor hygiene and safety for a food business.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p>
5	<p>Students will be focusing on assessing their own practical outcomes for success and potential further development in readiness for their NEA in Year 11.</p> <p>They will also undertake several practical lessons that will involve high skill dishes to develop their skills.</p>
6	<p>Students will work on a mock NEA to prepare them for the assessment in Year 11. This will include working to a brief and bringing in the knowledge they have gained over the year.</p> <p>This will include a practical assessment which will include presenting a dish that fits the brief that they have been working on.</p>

Homework

- *Homework will be a printed sheet; learners will have 2 weeks to complete.*
- *No more than 30 minutes should be spent of each piece.*

Useful resources:

- www.hse.gov.uk/cateringU3T
- 3TUwww.hodderplus.co.uk/catering/pc/extra1.pdfU3T
- 3TUwww.slideshare.net/carowilli/types-of-catering-establishments

Assessment

- *Assessments will a mixture of mock test papers and project work to reflect how the GCSE is built.*

Year 11 Overview (Design and Technology)

Half Term	Focus
1	<p>AO1 - Identify, investigate, and outline design possibilities to address needs and wants. By analysing the contextual challenge students will identify design possibilities, investigate client needs and wants and factors including economic and social challenges. Students should also use the work of others (past and/or present) to help them form ideas. Research should be concise and relate to their contextual challenge. Students are also advised to use a range of research techniques (primary/secondary) in order to draw accurate conclusions. Students should be encouraged to investigate throughout their project to help inform decisions.</p>
2	<p>AO2 - Design and make prototypes that are fit for purpose. Students should explore a range of possible ideas linking to the contextual challenge selected. These design ideas should demonstrate flair and originality and students are encouraged to take risks with their designs. Students may wish to use a variety of techniques to communicate. Students will not be awarded for the quantity of design ideas but how well their ideas address the contextual challenge selected. Students are encouraged to be imaginative in their approach by experimenting with different ideas and possibilities that avoid design fixation. In the highest band students are expected to show some innovation by generating ideas that are different to the work of the majority of their peers or demonstrate new ways of improving existing solutions.</p>
3	<p>AO3 - Analyse and evaluate: Students will develop and refine design ideas. This may include, formal and informal 2D/3D drawing including CAD, systems and schematic diagrams, models, and schedules. Students will develop at least one model, however marks will be awarded for the suitability of the model(s) and not the quantity produced. Students will also select suitable materials and components communicating their decisions throughout the development process. Students are encouraged to reflect on their developed ideas by looking at their requirements, including how their designs meet the design specification. Part of this work will then feed into the development of a manufacturing specification providing sufficient accurate information for third party manufacture, using a range of appropriate methods, such as measured drawings, control programs, circuit diagrams, patterns, cutting or parts lists.</p>
4	<p>AO4 - Demonstrate and apply knowledge and understanding: Students will work with a range of appropriate materials/components to produce prototypes that are accurate and within close tolerances. This will involve using specialist tools and equipment, which may include hand tools, machines, or CAM/CNC. The prototypes will be constructed through a range of techniques, which may involve shaping, fabrication, construction, and assembly. The prototypes will have suitable finish with functional and aesthetic qualities, where appropriate. Students will be awarded marks for the quality of their prototype(s) and how it addresses the design brief and design specification based on a contextual challenge.</p>

5	Countdown to exam
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<p>Homework</p> <ul style="list-style-type: none"> • Homework will be a printed sheet; learners will have 2 weeks to complete. • No more than 30 minutes should be spent of each piece. 	<p>Useful resources:</p> <ul style="list-style-type: none"> • https://www.bbc.co.uk/bitesize/examspecs/zby2bdm • https://technologystudent.com/despro_fish/NEW_GCSE3.html • https://www.aqa.org.uk/subjects/design-and-technology/gcse/design-and-technology-8552
<p>Assessment</p> <ul style="list-style-type: none"> • An overview of assessment over the year. There is no need for specific lists of assessments. 	

<p>Year 11 Overview (Hospitality)</p> <p>In this unit you will gain knowledge of the nutritional needs of a range of client groups in order for you to plan nutritional dishes to go on a menu. You will learn and develop safe and hygienic food preparation, cooking and finishing skills required to produce nutritional dishes.</p>
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Half Term	Focus
1	NEA preparation
2	AC1.1 Describe functions of nutrients in the human body. AC1.2 Compare nutritional needs of specific groups. AC1.3 Explain characteristics of unsatisfactory nutritional intake. AC1.4 Explain how cooking methods impact on nutritional value.
3	AC2.1 Explain factors to consider when proposing dishes for menus. AC2.2 Explain how dishes on a menu address environment. AC2.3 Explain how menu dishes meet customer needs. AC2.4 Plan production of dishes for a menu.
4	AC3.1 Use techniques in preparation of commodities. AC3.2 Assure quality of commodities to be used in food preparation. AC3.3 Use techniques in cooking of commodities. AC3.4 Complete dishes using presentation techniques. AC3.5 Use food safety practices.
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Homework

- *Homework will be a printed sheet; learners will have 2 weeks to complete.*
- *No more than 30 minutes should be spent of each piece.*

Useful resources:

- www.foodsafety.gov.uk
- <http://homefoodsafety.org/app>
- www.nutrition.org.uk
- www.food4life.org.uk/key-stage-four/health-and-nutrition/nutritional-requirements/
- www.gdalabel.org.uk/gda/gda_values.aspx

Assessment

- *Assessments will a mixture of mock test papers and project work to reflect how the GCSE is built.*