



DESIGN TECHNOLOGY

Why is the study of Design and Technology important?

Design and Technology is a practical and valuable subject. It enables you to actively contribute to the creativity, culture, wealth and well-being of yourself, your community and your nation. It teaches you how to take risks and so become more resourceful, innovative, enterprising and capable. You will develop a critical understanding of the impact of design and technology on daily life and the wider world. Additionally, it provides excellent opportunities for you to develop and apply value judgments of an aesthetic, economic, moral, social, and technical nature both in your own designing and when evaluating the work of others.

The subject at Outwood Academy City Fields is split up into the following categories:

- **Food technology:** Design recipes and create food products while learning about nutrition.
- **Graphics:** Learn how to use 2D and 3D modelling programs to plan and design products.
- **Resistant materials technology:** Work with materials like metals, plastic, wood, and use them to make interesting products.
- **Textiles:** Learn about the properties of materials and hand sewing techniques

What skills will the study of Design and Technology teach you?

Design and Technology applies knowledge, skills and understanding from within the subject itself, and also a wide range of other sources such as science and mathematics. Design and Technology will teach you to:

- Develop resilience by not being afraid of challenges when solving problems, but to break them down and keep trying.
- Be creative in developing solutions to real world problems.
- Use modelling and annotated sketches to develop and communicate ideas.
- How to act responsibly within a practical environment thinking of the safety of yourself and others.
- Identify how to competently use a range of practical techniques across a range of disciplines.
- Apply and use CAD/CAM equipment to design and manufacture a range of products /components considering scale of production and precision.
- Work independently and part of a team to solve complex problems.
- Construct reasoned arguments to ethical, social and moral problems that have arisen due to technology and communicate these effectively.
- Identify links between different materials and contextual references.

- Test, evaluate and refine ideas and products against a specification, taking into account the views of intended users and other interested groups.
- Understand and apply the principles of nutrition and health.
- Cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied diet.
- Become competent in a range of cooking techniques e.g. selecting and preparing ingredients: using utensils and equipment, applying heat in different ways: awareness of taste, texture and smell to decide how to season dishes and combine ingredients, adapting and using their recipes.
- Understand the source, seasonality and characteristics of a broad range of ingredients

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

- How to classify materials including smart materials and discuss their physical properties.
- How to manufacture products with reference to their material's physical properties.
- How to use and adjust equipment and machinery depending on the task.
- Use learning from science and mathematics to help design and manufacture components and products.
- To consider the influence of a range of lifestyle factors and consumer choices when designing and analysing products.
- To know and understand additional factors to consider such as ergonomics, anthropometrics or dietary needs.
- To use a variety of approaches, for example biomimicry and user-centred design to generate creative ideas and avoid stereotypical responses.
- To evaluate their work against an increasing range of designers, engineers, chefs, technologists and manufacturers and be able to relate their product to their own designing and making.
- To evaluate products through disassembly to determine how they are constructed and function and consider the life cycle analysis.
- to competently use a range of cooking techniques for example, selecting and preparing ingredients; using utensils and electrical equipment.
- the principles of nutrition and health including energy, nutrients, water, fibre, diet and health and nutritional needs throughout life and the risks of an unbalanced diet.
- A repertoire of predominantly savoury dishes in line with the principles of the Eatwell guide.
- To feed oneself taking into account personal preference, socio-economic aspects, nutritional and health needs.
- Healthy and varied diets as depicted in the eat-well plate and 8 tips for healthy eating.
- To explore the origin and product of food products and ingredients.
- To consider how seasons may affect the food available.
- To consider the function, nutrient profile and sensory attributes of ingredients.
- To study a range of food commodities e.g. cereals, fruits, vegetables, meat, fish, eggs, fats/oils, milk dairy food products.
- To develop a range of preparation, cooking and presentation skills.
- To plan menus for a range of individual and nutritional needs.
- To prepare and cook safely to prevent food poisoning.

- To explore the effect of advertising, marketing and packaging on food choice.

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

Design Technology develops a number of skills that will support your study of other subjects, as so many of the skills you will acquire in Design Technology are transferable. Design Technology disciplines will develop your focus, resilience, self-expression, teamwork, mathematical skills and problem solving and communication skills, which will help you in **all** of your other subjects. It will give you an opportunity for creative expression and practical thinking and encourage you to think about how to improve and hone your designs and encourage healthy eating etc. Some students may take this even further and discover a subject that provides them with a life-long hobby or career that enhances their life for years to come. All students will gain an understanding of healthy diets etc. The ability to think creatively and problem solve are crucial in Engineering, Mathematics and Science. It will foster an interest and skill in cooking and may lead to study of subjects such as catering etc.

How can you deepen your understanding of Design Technology?

To enhance your work in lessons, there will be times when we explore the professional workplace and wider design practices and materials. This will deepen your understanding of professional work and introduce you to new techniques and ideas.

You will also have the opportunity to deepen your understanding of Design Technology disciplines through extracurricular opportunities, where you can continue to develop your creative ideas, or work on specific design projects. During enrichment clubs, you will have the opportunity to meet art and design enthusiasts from other year groups, where you can share ideas, critique each other's work and continue to develop your technique.

There may also be an opportunity to participate in trips, as well as exhibiting your own work within the Academy. Occasionally, there will be opportunities to enter national or Trust competitions to gain additional audiences and recognition for your work such as local Council competitions and the National Schools Partnership.

How are you assessed in Design Technology?

Throughout the 5 years in Design Technology you are assessed using the following assessment objectives which ensure that you can cumulatively build your subject understanding in preparation for future GCSE and A Level study. There are up to 6 assessment points each year that we term Praising Stars©. In the lower years before certificated study we assess how students are performing against age related expectation and as students progress on to Level 1 and 2 courses such as GCSE and BTEC GCSE and Technical Awards at Level 1 and 2 we assess how their current stage of study reflects how they are on track to reach their end of KS4 targets which are formulated on aspirational expectation from their KS2 starting points. For both lower

and upper years we make an informed prediction from our holistic assessments based on our subject mapping of expectation across the Design Technology curriculum.

Assessment Objectives Design and Technology

	Design	Make	Evaluate	Technical Knowledge
KS3	<p>Use research and begin to explore, such as the study of different cultures, to identify and begin to understand user needs.</p> <p>To identify and solve issues within a design development task.</p> <p>Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of uses.</p> <p>Use a variety of influences, to generate creative ideas and avoid stereotypical responses.</p>	<p>Select from a wider, more complex range of materials and components, taking into account their properties.</p> <p>Make simple use of planning tools for instance Gantt charts, communicate their plans clearly so that others can implement them.</p> <p>Use a broad range of material joining techniques including stitching, mechanical fastenings, heat processes and adhesives.</p> <p>Make independent choices when selecting and using CAD/CAM to manufacture products/components and apply surface finishing techniques to increase the standard of quality.</p>	<p>Select appropriate methods to evaluate their products in use and modify them to improve performance.</p> <p>Produce short reports making suggestions for improvements.</p> <p>Evaluate products that they are less familiar with using themselves.</p> <p>Evaluate products considering life cycle analysis.</p> <p>Evaluate how products can be developed considering the concept of cradle to grave.</p>	<p>How to apply computing and use electronics to embed intelligence in products that respond to inputs.</p> <p>How to control outputs such as actuators and motors.</p> <p>How to use software and hardware to develop programmes and transfer these programmable components for example, microcontrollers.</p> <p>How to make use of microcontrollers in products they design and manufacture themselves.</p>

	<p>Use 2D and 3D to model and develop their ideas.</p> <p>Use CAD software to validate their designs in advance of manufacture.</p> <p>Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools.</p> <p>Consider additional factors such as ergonomics and anthropometrics.</p>	<p>Follow procedures for safety and understand the process of risk assessments.</p> <p>Make independent choices when selecting and using a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely.</p> <p>Apply a range of finishing techniques to a broad range of materials.</p>	<p>Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups.</p> <p>Evaluate new and emerging technologies.</p> <p>Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.</p>	<p>How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines.</p> <p>Use learning from science and maths to help design and make products that work.</p> <p>Understand the properties of materials, including smart materials, and how they can be used to advantage.</p>
KS3	<p>Use research, such as the study of different cultures, to identify user needs.</p> <p>Be able to outline a simple specification to inform design ideas and guide their thinking.</p>	<p>Produce ordered sequences and schedules for manufacturing products they design detailing resources required.</p> <p>Make use of specialist equipment to mark out materials.</p> <p>Use a broad range of material joining techniques including stitching.</p>	<p>Evaluate their products against their original specification and identify ways to improve them.</p> <p>Actively involve others in the testing of their products.</p>	<p>How to classify materials by structure e.g. hard woods, soft wood, ferrous and non-ferrous, thermoplastics and thermosetting plastics.</p> <p>Consider the physical properties of materials. E.g. brittleness malleability.</p>

	<p>Use 2D packages to model their ideas.</p> <p>Produce models of their ideas using CAM to test ideas.</p> <p>Be able to independently generate creative ideas informed by stimulus using annotations to explain key features relating to brief/specification.</p> <p>Consider additional factors such as ergonomics and anthropometrics.</p>	<p>mechanical fastenings, heat processes and adhesives.</p> <p>Select and use CAD/CAM to manufacture products/components and apply surface finishing techniques to increase the standard of quality.</p> <p>Investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials.</p> <p>Follow procedures for safety and understand the process of risk assessments.</p> <p>Select and use a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely.</p> <p>Apply a range of finishing techniques to a broad range of materials.</p>	<p>Evaluate products through disassembly to determine how they are constructed and function.</p> <p>Evaluate the positive and negative impact that products can have in the wider world.</p> <p>Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups.</p> <p>Evaluate new and emerging technologies.</p> <p>Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.</p>	<p>How to use simple electronic circuits incorporating inputs and outputs.</p> <p>Consider textile fibre sources e.g. natural and synthetic.</p> <p>How materials can be cast in moulds.</p> <p>Make use of sensors to detect heat, light etc such as thermistors and light dependent resistors.</p> <p>How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines.</p> <p>Use learning from science and maths to help design and make products that work.</p> <p>Understand the properties of materials, including smart</p>
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				materials, and how they can be used to advantage.
KS3	<p>Use research, such as the study of different cultures, to identify user needs.</p> <p>Be able to outline a simple specification to inform design ideas and guide their thinking.</p> <p>Use 2D packages to model their ideas.</p> <p>Produce models of their ideas using CAM to test ideas.</p> <p>Be able to independently generate creative ideas informed by stimulus using annotations to explain key features relating to brief/specification.</p>	<p>Produce ordered sequences and schedules for manufacturing products they design detailing resources required.</p> <p>Make use of specialist equipment to mark out materials.</p> <p>Use a broad range of material joining techniques including stitching, mechanical fastenings, heat processes and adhesives.</p> <p>Select and use CAD/CAM to manufacture products/components and apply surface finishing techniques to increase the standard of quality.</p> <p>Investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials.</p>	<p>Evaluate their products against their original specification and identify ways to improve them.</p> <p>Actively involve others in the testing of their products.</p> <p>Evaluate products through disassembly to determine how they are constructed and function.</p> <p>Evaluate the positive and negative impact that products can have in the wider world.</p> <p>Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups.</p>	<p>How to classify materials by structure e.g. hard woods, soft wood, ferrous and non-ferrous, thermoplastics and thermosetting plastics.</p> <p>Consider the physical properties of materials. E.g. brittleness malleability.</p> <p>How to use simple electronic circuits incorporating inputs and outputs.</p> <p>Consider textile fibre sources e.g. natural and synthetic.</p> <p>How materials can be cast in moulds.</p> <p>Make use of sensors to detect heat, light etc such as thermistors and light dependent resistors.</p>

	<p>Consider additional factors such as ergonomics and anthropometrics.</p>	<p>Follow procedures for safety and understand the process of risk assessments.</p> <p>Select and use a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely.</p> <p>Apply a range of finishing techniques to a broad range of materials.</p>	<p>Evaluate new and emerging technologies.</p> <p>Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.</p>	<p>How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines.</p> <p>Use learning from science and maths to help design and make products that work.</p> <p>Understand the properties of materials, including smart materials, and how they can be used to advantage.</p>
KS4	<p>Work confidently within a range of relevant domestic, local and industrial contexts, such as the home, health, leisure, culture, engineering, manufacture etc.</p> <p>Consider the influence of a range of lifestyle and consumer choices when designing products.</p>	<p>Produce costings spreadsheets for products they design and make.</p> <p>Match and select suitable materials and their fitness for purpose.</p> <p>Adapt their method of manufacture to changing circumstances.</p>	<p>Evaluate the concept of circular economy approaches in relation to product development and consumption.</p> <p>Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups.</p>	<p>How to construct and use simple and compound gear trains to drive mechanical systems from a high revving motor.</p> <p>How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines.</p>

	<p>Take creative risks when making design decisions.</p> <p>Analyse where human values may conflict and compromise has to be achieved.</p> <p>Decide which design criteria clash and determine which should take priority.</p> <p>Consider additional factors such as ergonomics and anthropometrics.</p>	<p>Recognise when it is necessary to develop a new skill or technique.</p> <p>Follow procedures for safety and understand the process of risk assessments.</p> <p>Make independent choices when selecting and using a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely.</p> <p>Apply a range of finishing techniques to a broad range of materials.</p>	<p>Evaluate new and emerging technologies.</p> <p>Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.</p>	<p>Use learning from science and maths to help design and make products that work.</p> <p>Understand the properties of materials, including smart materials, and how they can be used to advantage.</p>
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Assessment Objectives Cooking and Nutrition

Programmes of Study for cooking and nutrition	AO1: Understand health and safety relating to food and cookery	AO2: Understand and apply the principles of nutrition and health	AO3: Understand the source, seasonality and characteristics of a broad range of ingredients	AO4: Understand factors relating to food choice (so that they are able to feed themselves and others a healthy and varied diet).	AO5: Develop practical cooking skills (so that they become competent in a range of cooking techniques and able to cook a repertoire of predominantly savoury dishes)
Year 7	<p>Know and understand safe and hygienic working practices and the practical steps they can take to remain safe and hygienic.</p> <p>Know and understand safe preparation, usage, cleaning and storage of utensils and equipment</p>	<p>Know and understand what is meant by a balanced diet using the current UK dietary recommendations (Eatwell guide and 8 Tips)</p> <p>Know the sources and understand the functions of the nutrients that make up a balanced diet</p> <p>Know and understand the importance of exercise and energy balance in maintaining a healthy weight.</p>	<p>know and understand the main food groups and examples of foods for each group (cereals, fruit, vegetables, meat, fish, eggs, fats/oils, milk/dairy food products)</p> <p>Know and understand that foods come from a range of sources (caught, reared, grown).</p> <p>Know and understand that raw ingredients are processed to create food products (primary, secondary processing)</p>	<p>Know and understand the range of social and environmental factors that determine food choices:</p> <p>Personal/family preference</p> <p>Availability (seasonal/locality)</p> <p>Food miles</p> <p>Organics</p> <p>Food waste</p> <p>Packaging and recycling</p>	<p>Learners will be able to demonstrate a range of basic food preparation and cooking skills using a variety of food commodities</p> <ul style="list-style-type: none"> -Weighing/measuring -Knife skills (bridge/ claw) -Peeling - Segmenting -Boiling/ simmering -Rubbing in -Creaming/

					<p>all-in-one</p> <ul style="list-style-type: none"> - Melting - Folding - Baking
Year 8	<p>Know and understand how to identify risks (food poisoning, cross contamination) and minimise hazards in the cooking environment.</p> <p>Know and understand the difference between use by and best before dates)</p> <p>Know and understand the principles of safe storage, cooking and reheating foods.</p>	<p>Know and understand how nutritional requirements differ for specific groups of people (Life stages, allergies and intolerances)</p> <p>To understand how nutritional information and allergy advice on food packaging can be used to help make healthy choices (traffic lights).</p>	<p>Know and understand how ingredients have different effects in a recipe and be able to describe the sensory, nutritional and physical functions of ingredients in recipes.</p>	<p>Know and understand the range of cultural and ethical factors that determine food choices:</p> <p>Religion</p> <p>Vegetarian/vegan</p> <p>Fair trade</p> <p>Animal welfare</p> <p>Advertising/marketing.</p>	<p>Learners will make dishes of increasing complexity that further develop their food preparation and cooking skills and use a range of commodities.</p> <ul style="list-style-type: none"> -Making/shaping doughs -Sauce making - Blending - Frying -Whisking -Seasoning -Test for readiness
Year 9	<p>Know and understand the factors that affect bacterial growth</p>	<p>Know and understand the causes and effects of an unbalanced diet</p>	<p>Know and understand how processing affects the physical, sensory</p>	<p>Know and understand how economic factors</p>	<p>Learners continue to develop their food preparation and cooking skills making complex</p>

	<p>and their control (including temperatures)</p> <p>Know and understand the main causes of food contamination and the steps that need to be taken to prevent food poisoning.</p>	<p>Know and understand how to amend and develop a recipe to suit nutritional needs of individuals.</p>	<p>and nutritional properties of foods.</p>	<p>determine food choices and nutritional health:</p> <p>High and low budgets</p> <p>effects of food poverty</p> <p>Know how to make informed choices about food from packaging and labelling.</p>	<p>dishes that meet the needs of users</p> <p>They are able to follow recipes independently.</p> <p>They are developing presentation and styling techniques.</p>
Year 10	<p>Be able to explain food safety legislation and the role of the Environmental Health Officer.</p> <p>Know and understand the HACCP system and the purpose for food businesses.</p>	<p>Be able to analyse and evaluate diets and make recommendations for improving nutritional profile.</p> <p>Be able to calculate energy and nutritional content of recipes</p> <p>Be able to explain health risks of an unbalanced diet and give sound nutritional advice on how to improve it</p>	<p>Know and understand how cooking methods affect the nutritional content of dishes</p> <p>Know and understand why and how food is cooked and the chemical and physical changes that occur.</p>	<p>Know and understand how medical conditions determine food choices:</p> <p>Cardiovascular, obesity, bone health, dental health, type 2 diabetes, iron deficiency anaemia bowel disorders, allergies and intolerances.</p>	<p>Learners are able to organise their time, dovetailing planning to produce more than one complex dish in the time available.</p> <p>They are able to use equipment, including electrical equipment, with confidence.</p> <p>They are able to use presentation and food styling techniques independently.</p> <p>Be able to accurately portion foods.</p>

How can Design Technology support your future?

Of course, we offer the study of GCSE and we encourage your continued study in this fantastic subject. Yet we know that choice and personal interest are important aspects of worthy study. Whether you have continued your study of a discipline of Design Technology into GCSE or A level or not you will have gained access to this wide enriching subject and its study of the various disciplines will have taught you to think differently and deeply.

Design courses are offered at most prestigious universities and there are many technical and vocational qualifications that can be studied in engineering, product design, graphics, electronics, catering, nutrition etc. as well as routes into apprenticeships etc. The very fact that you have been able to study creative thinking, problem solving, planning and design principles will help your future application be it for colleges, universities, apprenticeships or employment.

Careers linked to Design Technology:

- Product Designer
- Civil engineer
- Quantity Surveyor
- Graphic Designer
- Fashion Designer
- Branding designer
- Software Engineer
- Catering
- Nutritionist
- Food technologist
- Manufacturing Engineer / manager
- Architect
- Construction
- Aerospace engineer

The list is endless as study of Design Technology opens up a world of opportunities.

DESIGN TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW OUTWOOD ACADEMY CITY FIELDS

THERE ARE SEPARATE OVERVIEWS FOR THE QUALIFICATIONS OFFERED AT BTEC AND GCSE IN THE OPEN ELEMENT. THESE WILL BE SEPARATELY LISTED ON YOUR ACADEMY WEBSITE THE GRID BELOW REFLECTS LOWER SCHOOL DELIVERY OF DT.

	YEAR 7	YEAR 8
	Year 7 D&T	Year 8 D&T
	<p>Students will have two hours of D&T a week which will be split over the different elements of D&T to ensure a broad curriculum is achieved where the key focus is learning about core materials. Students operate on a carousel system throughout the academic year with each term moving to a different D&T specialist area</p>	<p>Students will have two hours of D&T a week which will be split over the different elements of D&T to ensure a broad curriculum is achieved where the key focus is developing design skills / strategies whilst building on their technical knowledge. Students operate on a carousel system throughout the academic year with each term moving to a different D&T specialist area</p>
<p>Students will cover each specialism at different times. They will move to a new specialism at the start of each term</p>	<p>Graphics: Magazine Cover collaboration project, Merchandise Design and Production Food: Health and Hygiene Resistant Materials: Desk Tidy and Block Toy Textiles: Animal Headdress</p> <p>Resistant Materials: Desk Tidy</p> <p>This project will introduce students to the workshop and practical areas.</p> <p>Students will be guided through the departmental expectations and policies put in place to ensure every student knows the code of conduct. Students will use the key machines and tools that will be used throughout their 5 years at OACF.</p>	<p>Graphics: Confectionery Packaging Food: Food of the World Resistant Materials: Amplifier, Designer Clock and Night Light Textiles: Fabric Portrait</p> <p>Resistant Materials: Amplifier</p> <p>This project asks students to consider how sound could be amplified. Students do this by analysing existing products, speaking to others and experimenting with prototypes that they will make to understand how the design can enhance the sound of a smartphone</p> <p>The iterative design process will be key in this project and students will write up their findings along the way. They will come up with a final solution. Students will briefly cover</p>

	<p>Throughout the project students will be guided through the design process by analysing the design problem, writing their own specification and responding to this by designing different solutions. Students will be using jigs and templates to manufacture a desk tidy from the different categories of Timbers. Students should know the different categories of Timber materials, the origins of the materials and some examples of each.</p> <p><u>Resistant Materials: Block toy</u></p> <p>This project will introduce students to the workshop and practical areas.</p> <p>Students will be guided through the departmental expectations and policies put in place to ensure every student knows the code of conduct. Students will use the key machines and tools that will be used throughout their 5 years at OACF.</p> <p>Throughout the project students will be guided through the design process by analysing the design problem, writing their own specification and responding to this by designing different solutions. Students will be learning to use hand tools as well as machinery (Pillar drill, belt sander) to complete their block toy. Students will also be learning about the different categories of Timber materials, the origins of the materials and some examples of each as they will be using different types of timber to create their Block toy.</p> <p><u>Food and Nutrition: Health and Hygiene</u></p>	<p>isometric drawings and colour theory but the aim will be on the functioning of the prototype.</p> <p>The design element of this project is with the graphic / pattern they chose to laser cut onto the cast acrylic. Students will focus on. Using three techniques for designing (Biomimicry, design movements and inspirational design) to help them design their graphic. Students will be taught how to use cordless drills, different fixing (permanent and none permanent) techniques such as adhesives and screws. Recap of knowledge of timbers and polymers will be used with the introduction of new equipment such as files, scroll saws and oscillating sanders.</p> <p><u>Resistant Materials: Designer Clock</u></p> <p>This project develops upon knowledge and skill from Year 7. This project encourages students to consider the work of past and present designers to influence their work. Students will build upon the knowledge of using Design Briefs, Specifications, ACCESS FM, Product Analysis and Client profiles as well as material properties and uses. They will need to consider how different materials work together and what joins and tools can be used for each one</p> <p>Students will use an iterative design model to produce a solution to a given design brief. They will also learn to work with constraints, within tolerances and the use of given templates. They will evaluate their outcomes against the Design Brief and specification as well as comment on their own performance.</p> <p><u>Resistant Materials: Night light</u></p> <p>This project asks students to consider how circuits can be used to create a light up function to a product. Students do this by</p>
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	<p>This project will introduce students to the kitchen and practical area and develop their basic cooking skills</p> <p>Practical's</p> <ul style="list-style-type: none"> ● Fruit animals ● Fruit Crumble ● Pasta dish ● Fajitas ● Buns <p>The aim of this project is to give Year 7 students the opportunity to learn where food comes from, how to cook a range of dishes safely and hygienically and to apply their knowledge of healthy eating</p> <p>Knowledge and skills include: use of basic equipment and tools, basic practical skills such as weighing, chopping, using a gas and electric oven / hob, portion control, origin and simple functions of ingredients, healthy eating and The Eatwell Guide, food choice.</p> <p>Graphics: Magazine Cover</p> <p>This project will introduce students to the importance of working collaboratively and the use of CAD/CAM. Throughout the project students will be guided through the design process by analysing the design problem, writing their own specification and responding to this by designing different solutions. They will explore the work of others and companies in the sector. They are encouraged to research job roles and careers in Graphics as well as the importance of collaborative working.</p>	<p>learning about circuits as well as learning practical skills such as soldering to secure the lighting circuit.</p> <p>Students are able to enhance their Computer aided design skills by creating a unique night light topper on 2D design and using a laser cutter to engrave their design on an Acrylic plastic.</p> <p>Students will be guided through the design process by analysing the design problem, writing their own specification and responding to this by designing different solutions. Students will use tools such as the belt sander, fret saw, pillar drills as well as being taught how to use cordless drills, different fixing methods (permanent and non-permanent) techniques such as adhesives and screws. Students will also be learning about the different categories of metal materials, the characteristics of the materials and some examples of each.</p> <p>Food and Nutrition: Food of the world</p> <p>This project explores the cultural differences of the food from around the world. It explores Dietary requirements, Ethical issues and food labelling and laws.</p> <p>Practical's</p> <ul style="list-style-type: none"> ● Chicken Peri Peri ● Jam Roly Poly ● Chicken Korma ● Pizza ● Portuguese Custard Tarts <p>The aim of this project is to give students an understanding of the different cultural differences in food flavours and national</p>
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	<p>Students will work as part of a team to solve a design problem using CAD programmes such as Photoshop to produce an outcome. They will explore the positives and negatives of CAD/CAM</p> <p><u>Graphics - Merchandise design and production</u> This project will introduce students to the design process and the fundamentals of Graphic Design along with the use of CAD/CAM. Throughout the project students will be guided through the design process by analysing the design problem, writing their own specification and responding to this by designing different solutions. They will explore the work of others and lead designers within the sector. They are encouraged to research job roles and careers in Graphics as well as industrial production techniques. Students will use the iterative design process to solve a design problem using the Graphics fundamentals along with personal experience. They will explore the positives and negatives of CAD/CAM and evaluate their performance in the project.</p> <p><u>Textiles - Animal Headdress</u> In this project, students will explore the use of fabrics and sewing techniques. They will develop hand sewing skills as well as machine sewing. They will find out the difference between natural fibres and synthetic ones and also how fabrics are created. They will use their creative design skills to make their own printed fabric using CAD and sublimation printing. They will then use this fabric to create an animal inspired headdress</p>	<p>dishes. It also introduces them to the laws surrounding food production and the Ethical issues such as Fairtrade and Animal welfare.</p> <p><u>Graphics: Confectionery Packaging</u> Students are to develop their own corporate Identity and develop their CAD/CAM skills. Students develop knowledge of Colour theory, use of imagery, Typography, rendering skills, labelling and Market pull. They will expand their skills on existing product analysis, exploration of design problems, specification development and designing for a specific target market.</p> <p>This project is mathematical based and will develop upon the knowledge of nets and 3D shapes as well as measuring and marking accurately. They will explore the material category of Paper and board and expand their knowledge of CAD/CAM programmes.</p> <p><u>Textiles - Fabric Portrait</u> Students will develop their hand and machine sewing skills to produce an innovative and creative self portrait from fabric. They will draw upon inspiration from the creative design movement of Pop Art. They will analyse theirs and work of others using ACCESS FM and create specification lists and explore the Design Brief. They will develop a deeper understanding of material sources and construction techniques.</p>
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Year 9 Have one lesson per week and will rotate on a termly basis

Year 9

Design Project

Manufacture Project

Hospitality and Catering Skill building

Design Project

Students will be given a GCSE style Brief to solve consisting of a popular product. They will then have to develop on the skills that they have developed in projects in Y7 and 8 to solve given briefs.

They will analyse the Brief using ACCESS FMM and create a Design Specification. They will explore existing products and complete an analysis of these. They will then use this to inform their design ideas. They will develop new drawing skills and learn to draw in a technical way using the following technical drawing skills; Oblique, Isometric, One and Two point perspective, Orthographic and Third Angle Projections.

They will develop skills that will enable them to create more innovative designs and they will explore rendering techniques that will enhance their design tasks.

They will then use CAD to create a 3D virtual model of their design and use this to create a prototype.

They will fully evaluate the design process as well as their own performance.

Make Project

Students will be given a GCSE style Brief to solve consisting of a popular product. They will then have to develop on the skills that they have developed in projects in Y7 and 8 to solve given briefs.

They will analyse the Brief using ACCESS FMM and create a Design Specification. They will explore existing products and complete an analysis of these. They will then be given a product similar to the one in the Brief to disassemble. They will need to produce a plan of disassembly and complete a Risk assessment form.

They will explore different manufacturing techniques and material properties.

They will plan out the manufacturer of their own product and document the process of making it through a manufacturing diary. They will fully evaluate the design process as well as their own performance.

Hospitality and Catering Skill building

Students will take the time to develop more high skill techniques within practical lessons. They will make typical shop bought items from scratch including pizza dough and pasta shapes and sheets. They will develop their understanding of Food Health

	<p>and Hygiene including cross contamination and the role of an Environmental Health Officer. They will explore more dietary needs of people and how to plan and adapt recipes to suit these additional requirements. They will also learn how to plan to cook more complex dishes and evaluate their success in this. They have more responsibility in planning and prepping for practical lessons in year 9.</p>
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