DESIGN TECHNOLOGY

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 Bishopsgarth is split up into the following categories:

- **Food technology:** Learning about making healthy choices through the Health & Wellbeing Programme whilst learning key practical skills through Technology lessons.
- Textiles technology: Developing a range of decoration techniques and making a range of creative textile products.
- Resistant Materials Technology: Developing a range of practical skills whilst designing and making products using a variety of materials, including wood, plastic and metal.

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 and 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 in an effective way.
- Identify links between different materials and contextual references.
- Test, evaluate and refine their 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 (for example, selecting and preparing ingredients: using utensils and electrical equipment, applying heat in different ways: using awareness of taste, texture and smell to decide how to season dishes and combine ingredients, adapting and using their recipes).

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 use simple electronic circuits incorporating inputs and outputs.
- How to manufacture products with reference to their materials physical properties.
- Students will learn to use and adjust equipment and machinery dependent on tasks.
- Use learning from science and mathematics to help design and manufacture components and products.
- Students will learn to consider the influence of a range of lifestyle factors and consumer choices when designing and analysing products.
- Students will know and understand additional factors to consider such as ergonomics, anthropometrics or dietary needs.
- How to use a variety of approaches, for example biomimicry and user-centred design to generate creative ideas and avoid stereotypical responses.
- Students will be able to evaluate products through disassembly to determine how they are constructed and function and consider the life cycle analysis.
- How 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 eg. 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 home 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.

How are you assessed in Design Technology and Hospitality and Catering?

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 study in KS4 and after Academy life. There are 6 assessment points each year that we term Praising Stars©. In the years 7 & 8, before GCSE subjects are chosen, we assess how students are performing against age related expectation and, as students' progress onto Level 1/2 courses such as GCSE and Cambirdge Nationals and Vocational courses, 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 judgement from our holistic assessments based on our subject mapping of expectation across the Design Technology curriculum.

Assessment Objectives in Hospitality and Catering

Unit 1 - Exam - The Hospitality and Catering Industry

- LO1: Hospitality and catering provision
- LO2: How hospitality and catering provisions operate.
- LO3: Health and safety in hospitality and catering.
- LO4: Food safety in hospitality and catering.

Unit 2 - Controlled Assessment - Hospitality and Catering in Action

- LO1: Understand the importance of nutrition when planning menus
- LO2: Understand menu planning
- LO3: The skills and techniques of preparation, cooking and presentation of dishes
- LO4: Evaluating cooking skills

Assessment Objectives Design and Technology

	Design	Make	Evaluate	Technical Knowledge
KS4	Understand that all design and technological practice takes place within contexts which inform outcomes Investigate and analyse the work of past and present professionals and companies in the area of design and technology in order to help inform their own ideas Use different design strategies, such as collaboration, user-centred design	Develop and apply in-depth knowledge by selecting and working with appropriate materials and components in order to produce a prototype Apply in depth knowledge using appropriate and accurate marking out methods including: measuring and use of reference points, lines and surfaces; use templates, jigs and/or patterns; work within tolerances;	Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups. Critically evaluate new and emerging technologies to inform design decisions; considering contemporary and potential future scenarios from different perspectives, such as ethics and the environment.	Understand the impact of new and emerging technologies on industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems. Know how energy is generated and stored in order to choose and use appropriate sources to make products and to power systems.

	and systems thinking, to generate initial ideas and avoid design fixation. Design and develop at least one prototype that responds to needs and/or wants and is fit for purpose, demonstrating functionality, aesthetics, marketability and consideration of innovation Consider additional factors such as ergonomics and anthropometrics.	understand efficient cutting and how to minimise waste. Follow procedures for safety and write risk assessments. Use specialist techniques and processes to shape, fabricate, construct and assemble a high quality prototype, including techniques such as wastage, addition, deforming and reforming, as appropriate to the materials and/or components being used Use appropriate surface treatments and finishes for functional and aesthetic purposes	Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.	Understand developments in modern and smart materials, composite materials and technical textiles. Understand how electronic systems provide functionality to products and processes, including sensors and control devices to respond to a variety of inputs, and devices to produce a range of outputs Understand how the use of programmable components are used to embed functionality into products in order to enhance and customise their operation Understand the functions of mechanical devices, to produce different sorts of movement, changing the magnitude and direction of forces: Know how to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines. Use learning from science and maths to help design and make products that work.

KS4	Work confidently within a range of relevant domestic, local and industrial contexts, such as the home, health, leisure, culture, engineering, manufacture etc. Consider the influence of a range of lifestyle and consumer choices when designing products. Take creative risks when making design decisions. Analyse where human values may conflict and compromise has to be achieved. Decide which design criteria clash and determine which should take priority. Consider additional factors such as ergonomics and anthropometrics.	Produce costings spreadsheets for products they design and make. Match and select suitable materials and their fitness for purpose. Adapt their method of manufacture to changing circumstances. Recognise when it is necessary to develop a new skill or technique. Follow procedures for safety and understand the process of risk assessments. Make independent choices when selecting and using a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely. Apply a range of finishing techniques to a broad range of materials.	Evaluate the concept of circular economy approaches in relation to product development and consumption. Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups. Evaluate new and emerging technologies. Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.	How to construct and use simple and compound gear trains to drive mechanical systems from a high revving motor. How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines. Use learning from science and maths to help design and make products that work. Understand the properties of materials, including smart materials, and how they can be used to advantage.

Y9	Develop 2D and 3D design skills further by experimenting further with CAD packages. Specific focus on isometric and orthographic drawing skills.	Use a larger proportion of mixed, natural woods, taking into account their properties. Dedicated focus on traditional joining methods, prioritising accuracy throughout. Make independent choices when selecting and using CAD/CAM to manufacture products/components and apply surface finishing techniques to increase the standard of quality. Explain and follow procedures for safety and understand the process of risk assessments. Make independent choices when selecting and using a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely. Apply a range of finishing techniques to a broad range of materials.	Select appropriate methods to evaluate their products in use and modify them to improve performance. Produce short reports making suggestions for improvements. Evaluate products that they are less familiar with using themselves. Evaluate products considering life cycle analysis. Evaluate how products can be developed considering the concept of cradle to grave. Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups. Evaluate new and emerging technologies. Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.	Understand the functions of mechanical devices, to produce different sorts of movement, changing the magnitude and direction of forces: Know how to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines. Know how to make informed decisions regarding the best way to produce products accurately. Use learning from science and maths to help design and make products that work

Y8	Use research to begin to explore different cultures, to identify and begin to understand user needs. To identify and solve issues within a design development task. Develop specifications to inform the design of innovative, functional, appealing products that respond to needs in a variety of uses. Use a variety of influences, to generate creative ideas and avoid stereotypical responses. Use 2D and 3D to model and develop their ideas. Use CAD software to validate their designs in advance of manufacture. Develop and communicate design ideas using annotated sketches, detailed plans, 3-D and mathematical modelling, oral and digital presentations and computer-based tools. Consider additional factors such as ergonomics and anthropometrics.	Select from a wider, more complex range of materials and components, taking into account their properties. Make simple use of planning tools for instance Gantt charts, communicate their plans clearly so that others can implement them. Use a broad range of material joining techniques including stitching, mechanical fastenings, heat processes and adhesives. Make independent choices when selecting and using CAD/CAM to manufacture products/components and apply surface finishing techniques to increase the standard of quality. Follow procedures for safety and understand the process of risk assessments. Make independent choices when selecting and using a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely. Apply a range of finishing techniques to a broad range of materials.	Select appropriate methods to evaluate their products in use and modify them to improve performance. Produce short reports making suggestions for improvements. Evaluate products that they are less familiar with using themselves. Evaluate products considering the life cycle analysis. Evaluate how products can be developed considering the concept of cradle to grave. Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups. Evaluate new and emerging technologies. Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.	How to apply computing and use electronics to embed intelligence in products that respond to inputs. How to control outputs such as actuators and motors. How to use software and hardware to develop programmes and transfer these programmable components for example, microcontrollers. How to make use of microcontrollers in products they design and manufacture themselves. How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines. Use learning from science and maths to help design and make products that work. Understand the properties of materials, including smart materials, and how they can be used to advantage.

Y7	Use research, such as the study of different cultures, to identify user needs. Be able to outline a simple specification to inform design ideas and guide their thinking. Use 2D packages to model their ideas. Produce models of their ideas using CAM to test ideas. Be able to independently generate creative ideas informed by stimulus using annotations to explain key features relating to brief/specification. Consider additional factors such as ergonomics and anthropometrics.	Produce ordered sequences and schedules for manufacturing products they design detailing resources required. Make use of specialist equipment to mark out materials. Use a broad range of material joining techniques including stitching, mechanical fastenings, heat processes and adhesives. Select and use CAD/CAM to manufacture products/components and apply surface finishing techniques to increase the standard of quality. Investigate and develop skills in modifying the appearance of materials including textiles and other manufactured materials. Follow procedures for safety and understand the process of risk assessments. Select and use a broad range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely.	Evaluate their products against their original specification and identify ways to improve them. Actively involve others in the testing of their products. Evaluate products through disassembly to determine how they are constructed and function. Evaluate the positive and negative impact that products can have in the wider world. Test, evaluate and refine their ideas and products against the specification taking into account the views of intended users and other interested groups. Evaluate new and emerging technologies. Evaluate an increasing range of designers, engineers, technologists and manufacturers and be able to relate their products to their own designing and making.	How to classify materials by structure e.g hard words, soft wood, ferrous and non-ferrous, thermoplastics and thermosetting plastics. Consider the physical properties of materials. E.g brittleness and malleability. How to use simple electronic circuits incorporating inputs and outputs. Consider textile fibre sources eg. natural and synthetic. How materials can be cast in moulds. Make use of sensors to detect heat, light etc such as thermistors and light dependent resistors. How to make adjustments to the settings of equipment and machinery such as sewing machines and drilling machines. Use learning from science and maths to help design and make products that work.

		Apply a range of finishing techniques to a broad range of materials.		Understand the properties of materials, including smart materials, and how they can be used to advantage.

Assessment Objectives Cooking and Nutrition

Programmes of Study for cooking and nutrition Key messages, advice and explanatory notes (1-8) for schools	**AO1: Understand health and safety relating to food and cookery** (Explanatory note 2)	**AO2: Understand and apply the principles of nutrition and health** (Explanatory notes 1 &4)	**AO3: Understand the source, seasonality and characteristics of a broad range of ingredients** (Explanatory notes 5,7&8)	**AO4: Understand factors relating to food choice** (**so that they are able to feed themselves and others a healthy and varied diet**). (Explanatory note 3 &6)	**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**) (Explanatory note 2)
KS4 Hospitality and Catering	Know and understand the factors that affect bacterial growth and their control (including temperatures) Know and understand the main causes of food contamination and the steps that need to be taken to prevent food poisoning	Be able to analyse and evaluate diets and make recommendations for improving nutritional profile. Be able to calculate energy and nutritional content of recipes Be able to explain health risks of an unbalanced diet	Know and understand how cooking methods affect the nutritional content of dishes Know and understand why and how food is cooked and the chemical and physical changes that occur.	Know and understand how medical conditions determine food choices: Cardiovascular, obesity, bone health, dental health, type 2 diabetes, iron deficiency anaemia bowel disorders, allergies and intolerances.	Learners are able to organise their time, dovetailing planning to produce more than one complex dish in the time available. They are able to use equipment, including electrical equipment, with confidence.

	Be able to explain food safety legislation and the role of the Environmental Health Officer. Know and understand the HACCP system and the purpose for food businesses.	and give sound nutritional advice on how to improve it Know and understand the causes and effects of an unbalanced diet Know and understand how to amend and develop a recipe to suit nutritional needs of individuals.			They are able to use presentation and food styling techniques independently. Be able to accurately portion foods.
KS3 Year 9	Know and understand how to identify risks (food poisoning, cross contamination) and minimise hazards in the cooking environment.	Know and understand how nutritional requirements differ for specific groups of people (Life stages, allergies and intolerances)	Know and understand how processing affects the physical, sensory and nutritional properties of foods. 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) Know and understand that foods come from a range of sources (caught, reared, grown).	Know and understand the range of cultural and ethical factors that determine food choices: Religion Vegetarian/vegan Fair trade Animal welfare Know and understand the range of social and environmental factors that determine food choices: Availability (seasonal/locality) Food miles Organics Food waste Packaging and recycling	Learners continue to develop their food preparation and cooking skills making complex dishes that meet the needs of users They are able to follow recipes independently. They are developing presentation and styling techniques.

			Know and understand that raw ingredients are processed to create food products (primary, secondary processing).		
Year 8	Know and understand the difference between use by and best before dates) Know and understand the principles of safe storage, cooking and reheating foods.	To understand how nutritional information and allergy advice on food packaging can be used to help make healthy choices (traffic lights).	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.	Know and understand the range of cultural and ethical factors that determine food choices: Advertising/marketing. Know and understand how economic factors determine food choices and nutritional health: High and low budgets Effects of food poverty Know and understand the range of social and environmental factors that determine food choices: Personal/family preference	Learners will make dishes of increasing complexity that further develop their food preparation and cooking skills and use a range of commodities. - Making/shaping doughs - Sauce making - Blending - Frying - Whisking - Seasoning - Test for readiness

Year 7	Know and understand safe and hygienic working practices and the practical steps they can take to remain safe and hygienic. Know and understand safe preparation, usage, cleaning and storage of utensils and equipment	Know and understand what is meant by a balanced diet using the current UK dietary recommendations (Eatwell guide and 8 Tips) Know the sources and understand the functions of the nutrients that make up a balanced diet Know and understand the importance of exercise and energy balance in maintaining a healthy weight.	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)		Learners will be able to demonstrate a range of basic food preparation and cooking skills using a variety of food commodities -Weighing/measuring -Knife skills (bridge/ claw) -Peeling - Segmenting -Boiling/simmering -Rubbing in -Creaming/all-in-one - Melting - Folding - Baking

How can Design Technology support your future?

Of course, we offer the study of Level 1/2 Vocational courses 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 to study a discipline of 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 they 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

Curriculum Planning

It is recognised schools are teaching a wide range of KS4 specifications, the themes and subject content have been identified from the following sources :

- The Design and Technology programmes of study for KS3
- WJEC Level 1/2 in Hospitality and Catering.
- OCR Cambridge Nationals Level 1/2 in Child Development

Curriculum content only covers core knowledge common to all KS4 specifications. It is expected schools will include additional content from their chosen specification into their planning.

Subject Curriculum Progression Overview

DESIGN AND TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW OUTWOOD ACADEMY BISHOPSGARTH			
	Year 7 **2 lessons per week**	**YEAR 8** **2 lessons per week**	**YEAR 9** **1 lesson per week**
	Students in year 7 and 8 have two lessons of D&T a week. All groups will have 1 lesson per week in Textiles/food and 1 lesson per week in RMT over the year. Years 7 and 8 will follow the same projects this year. Students in year 9 will have 1 lesson per week and spend half the year in Food and half the year in RMT on a rotation. Year 9 will follow the same projects as Years 7 and 8 initially but develop a wider range of finishing skills. The theoretical 'Cooking & Nutrition' element of the Knowledge Rich Curriculum for Design & Technology in Years 7 and 8 is partly delivered through the Health & Wellbeing curriculum whilst the practical skills are delivered through Design & Technology lessons.		
Textiles Technology	**<u>Introduction to Technology</u>** • Health and safety • Basic equipment • Use of sewing machine and hand sewing techniques • Uses of textiles • Categorising fibres. [KiP]	**<u>Cultural Cushions</u>** • Introduction to design task. • Analysis of existing cushions [KiP] • Investigate the potential user of the cushion. • Investigate a range of designers / cultural influences. • Analysis of research	

	<u>Printing & Quilting project</u> • Introduction to design task • Analysis of existing products [KiP] • Smart materials • Write simple specification [KiP] • Designing by adapt the basic pattern pieces • Use CAD to develop repeat patterns based on research homework. • Printing samples - modelling of block printing, stencilling, fruit & vegetable and potato printing • Evaluation of ideas. • Final design [KiP] • List equipment and materials needed for their planning. • Flowchart for making [KiP] • Pattern cutting • Printing fabric and making of the oven glove. • Evaluation against specification [KiP]	• Plan and create a specification for a creative cultural cushion. [KiP] • Decorative techniques – sublimation printing/heat press, applique • Use theme boards of existing designers/ cultural influences to develop a range of design ideas. CAD. • Evaluate design ideas against the specification and identify which to make. [KiP] • Produce final design. • Plan for making including list of materials and equipment + flow chart (GANTT chart) • Pattern making. • Cutting fabrics. • Plain seams + pressing seams open. • Sublimation printing + Applique • Making of piped edges - zipper feet and adjusting settings of sewing machines. • Adding zips. [KiP] • Evaluation and testing against specification. [KiP]	
Food Technology	• Health and safety in Food • Basic equipment in Food **Learn to cook a range of healthy snacks including:** • Coleslaw	• Food storage • Key temperatures and food hygiene. **Learn to cook a range of healthy family meals including:** • Spicy tomato Soup	• Knife skills and safety • Food poisoning /hygiene • Cross contamination • Cooking methods • Nutritional needs of different groups

	• Layered Pasta Salad • Pizza Toast • Chicken goujons/fish fingers • Fruit breakfast muffins • High fibre rock buns • Fruity flapjacks • Tortilla toasties • Fruity pancakes **Developing and demonstrating the following skills:** • Weighing/ Measuring • Knife Skills • Oven/ Grill management • Coating • Peeling • Boiling • Frying • Simmering • Baking • Blending • Segmenting • Test for readiness	• Tuna fish cakes • Macaroni cheese • Savoury rice • Shepherd's pie • Pizza • Spaghetti bolognese • Lasagne • Carrot cakes • Mince and dumplings **Developing and demonstrating the following skills:** • Creaming • All in One • Melting • Baking • Making/ Shaping dough • Sauce making • Whisking • Seasoning	• Religion and diet • Macro and micro nutrients • Diet related illnesses - prevention • Food commodities • Primary and secondary processing • Seasonality • Food miles • Packaging • Food provenance - grown, reared, caught • Recipe modification **Learn to cook a range of predominantly savoury meals developing the following skills:** • Knife skills • Cooking from scratch • Rubbing in • Pastry making and uses • Kneading and shaping doughs • Portion control • Cake making methods including Whisked sponge Creaming method Melting method • Heat transfer methods • Weighing and measuring • Sauce making • Using a blender

Resistant Materials Technology	**Learn to make a range of products including a litter picker, phone amplifier, and STEM graphics challenges to gain knowledge on:** • Health and Safety in a workshop • Timbers and their properties • Working with a range of timbers to produce mechanisms • Sustainability • Evaluating designs • Levers and Mechanisms • Finishing Materials **Developing and demonstrating the following skills in wood, metal and plastic;** • Basic drawing skills (lines, curves and shapes) • Use of specialist equipment to mark out materials. (using a ruler, tri-square and marking gauge) • Sawing skills (coping saw and tenon saw) • Chiselling skills • Model making skills (using a craft knife and making 3D forms) • CAD skills (using photoshop and maybe 2D Design if applicable) • Machine skills (Belt sander and pillar drill)	**Learn to make a range of products including a litter picker, phone amplifier, and STEM graphics challenges to gain knowledge on:** • Health and Safety in a workshop • Timbers and their properties • Working with a range of timbers to produce mechanisms • Sustainability • Evaluating designs • Levers and Mechanisms • Finishing Materials **Developing and demonstrating the following skills in wood, metal and plastic;** • Basic drawing skills (lines, curves and shapes) • Use of specialist equipment to mark out materials. (using a ruler, tri-square and marking gauge) • Sawing skills (coping saw and tenon saw) • Chiselling skills • Model making skills (using a craft knife and making 3D forms) • CAD skills (using photoshop and maybe 2D Design if applicable) • Machine skills (Belt sander and pillar drill) • Use a basic range of simple joining techniques including mechanical fastenings, heat processes and adhesives.	**Learn to make a range of products including a litter picker, phone amplifier, and STEM graphics challenges to gain knowledge on:** • Health and Safety in a workshop • Timbers and their properties • Working with a range of timbers to produce mechanisms • Sustainability • Evaluating designs • Levers and Mechanisms • Finishing Materials **Developing and demonstrating the following skills in wood, metal and plastic;** • Basic drawing skills (lines, curves and shapes) • Use of specialist equipment to mark out materials. (using a ruler, tri-square and marking gauge) • Sawing skills (coping saw and tenon saw) • Chiselling skills • Model making skills (using a craft knife and making 3D forms) • CAD skills (using photoshop and maybe 2D Design if applicable) • Machine skills (Belt sander and pillar drill) • Use a basic range of simple joining techniques including mechanical fastenings, heat processes and adhesives.

	• Use a basic range of simple joining techniques including mechanical fastenings, heat processes and adhesives. • Modifying the appearance of manufactured materials. • Use a limited range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely. • Apply a range of finishing techniques to a broad range of materials.	• Modifying the appearance of manufactured materials. • Use a limited range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely. • Apply a range of finishing techniques to a broad range of materials.	• Modifying the appearance of manufactured materials. • Use a limited range of manufacturing techniques including hand craft skills and machinery to manufacture products precisely. • Apply a range of finishing techniques to a broad range of materials.

In addition to the above, the Year 7 & 8 Students study elements of the Cooking and Nutrition strand of the D&T Curriculum through the Health & Wellbeing Curriculum. Students study the following on a10 -13 week rotation.

2023 - 24 Year Plan - Year 7 & 8 - Health & Nutrition

Year 7 Health & Nutrition	Year 8 Health & Nutrition	
• Eatwell guide: - introduction to sections + Fruits & vegetables (5 -a-day campaign) - carbohydrates /energy balance - dairy - protein - oils and spreads - fibre • 8 tips for healthy eating	• Staple foods and importance of breakfast • Cooking methods and the effects on nutrients. • Factors affecting food choices • Advertising and marketing • Labelling • Diet related illness • Making healthy choices	

• Rethink your drink		

DESIGN AND TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW			
Hospitality and Catering		**Year 10**	**Year 11**
Autumn Term 1		LO4 Food safety in Hospitality and Catering • Personal hygiene and knife skills • Food related causes of ill health and chemical contamination of food • The conditions bacteria need to grow and the key temperatures • Food related ill health, types of food poisoning. • Moulds and yeasts • Allergies and intolerances • Food safety legislation and food labelling Develop practical skills by cooking a range of recipes including sausage casserole, Victoria sandwich cake, gingerbread, scones and pavlova: • Knife skills • Simmering • Seasoning • Creaming method • Presentation skills • Melting method • Rubbing in method	Preparation for Controlled assessment • Nutritional value of cooking methods • Factors affecting menu planning • How to plan production Non-Exam Assessment

		• Portioning • Shaping • Testing for readiness • Whisking • Piping	
Autumn Term 2		LO4 Food safety in Hospitality and Catering • The role of an environmental health officer LO4 Assessment LO1 Hospitality and Catering provision • Commercial and non commercial establishments • Types of food service • Standards and ratings • Types of employment • Personal attributes Develop practical skills (pastry) • Shortcrust pie • Sausage rolls - puff pastry • Profiteroles - choux pastry • Spring rolls - filo pastry • Jam and jam roly poly - suet pastry • Christmas tree bread	Non-Exam Assessment
Spring Term 1		LO1 Hospitality and Catering provision • Conditions of pay - contracts • Costs of hospitality and catering businesses • Media in hospitality and catering LO1 Assessment	Non-Exam Assessment LO2 How Hospitality and Catering provisions operate • The operation of the front and back of house • Types of equipment • Customer requirements

		Develop practical skills by making recipes such as lemon meringue pie, fish and chips, custard tart, fish pie, Manchester tart and brioche: • Pastry making • Meringue • Blind baking • Sauce making • Sweet yeast dough • Testing for readiness • Piping • Coating • Frying	LO3 Health and safety in Hospitality and Catering • Health and safety laws • Completing accident forms and risk assessments • Health and safety training requirements • HACCP
Spring Term 2		Preparation for Controlled assessment • Protein • Carbohydrates • Fat • Vitamins • Minerals Develop practical skills by making a range of recipes such as Cornish pasties, bread based pizza, cheesecake, curry, potato accompaniments and Black forest gateau: • Pastry making • Portioning • Crimping • Weighing and measuring • Glazing • Decoration techniques • Creaming • Bread making • Baking	LO1 Hospitality and Catering provision Revision LO4 Food safety in Hospitality and Catering Revision

Summer Term 1		Preparation for Controlled assessment • Minerals • Fibre and water • Nutrition for different life-stages • Special dietary needs for individuals Develop practical skills by making a range of recipes such as sticky toffee pudding and custard, sweet and sour chicken, chilli con carne and trifle: • Melting method • Sauce making • Seasoning • Weighing and measuring • Jelly making • Cake making • Presentation techniques	Revision for written exam
Summer Term 2		Develop practical skills by making a range of recipes including chicken kievs with savoury rice, ravioli, beef burgers, panna cotta and Scotch eggs: • Coating • Layering • Combining ingredients • Binding • Frying • Pasta making • Portioning • Shaping • Presentation skills • Seasoning	

DESIGN AND TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW			
Child Development		**Year 10 (3 hours a week)**	**Year 11 (2 hours a week)**
Autumn Term 1		RO58 - Topic Area 1 Accidents and accident prevention in a childcare setting ● Why children have accidents ● Types of accident RO58 - Topic Area 1 Accidents and accident prevention in a childcare setting. ● Preventing accidents in a nursery Non-Exam Assessment	RO59 Topic Area 3: Observe the development of a child aged one to five years ● Observation methods ● Recording methods ● Planning activities Non-Exam Assessment
Autumn Term 2		RO58 Topic Area 2: Choosing suitable equipment for a childcare setting ● Factors affecting choice of equipment ● Types of equipment Non-Exam Assessment	RO59 Topic Area 4: Plan and evaluate play activities for a child aged one to five years for a chosen area of development ● Evaluating activities Non-Exam Assessment
Spring Term 1		RO58 Topic Area 3: Nutritional needs of children from birth to five years ● Government dietary recommendation ● British Nutrition Foundation recommendations ● Nutrients and their function Non-Exam Assessment	Revision and exam preparation.
Spring Term 2		RO58 Topic Area 3: Nutritional needs of children from birth to five years	Revision and exam preparation.

		• Food sources to meet nutritional needs of different age groups • Plan for preparing a feed. Non-Exam Assessment	
Summer Term 1		RO59 Topic Area 1: Physical, intellectual and social developmental norms from one to five years • Physical, intellectual and social development norms	Revision and exam preparation.
Summer Term 2		RO59 Topic Area 2: Stages and types of play and how play benefits development • Stages and types of play • Benefits of play	