



## 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.
- **Textiles:** Developing a range of decoration techniques and making a range of creative textile products.
- **Resistant materials technology:** Learning about materials such as metals, plastic, wood, and how to use them to make interesting products.

#### 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 and 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. During enrichment clubs, you will have the opportunity to meet food 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.

### 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 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 Cambridge 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 Design and Technology

	Design	Make	Evaluate	Technical Knowledge
<b>KS4</b>	<p>Understand that all design and technological practice takes place within contexts which inform outcomes</p> <p>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</p> <p>Use different design strategies, such as collaboration, user-centred design and systems</p>	<p>Develop and apply in-depth knowledge by selecting and working with appropriate materials and components in order to produce a prototype</p> <p>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; understand efficient cutting and how to minimise waste.</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>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.</p>	<p>Understand the impact of new and emerging technologies on industry, enterprise, sustainability, people, culture, society and the environment, production techniques and systems.</p> <p>Know how energy is generated and stored in order to choose and use appropriate sources to make products and to power systems.</p>

	<p>thinking, to generate initial ideas and avoid design fixation.</p> <p>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</p> <p>Consider additional factors such as ergonomics and anthropometrics.</p>	<p>Follow procedures for safety and write risk assessments.</p> <p>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</p> <p>Use appropriate surface treatments and finishes for functional and aesthetic purposes</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>Understand developments in modern and smart materials, composite materials and technical textiles.</p> <p>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</p> <p>Understand how the use of programmable components are used to embed functionality into products in order to enhance and customise their operation</p> <p>Understand the functions of mechanical devices, to produce different sorts of movement, changing the magnitude and direction of forces:</p> <p>Know 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>
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<p><b>KS4</b></p>	<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>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>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>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 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>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 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>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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<p><b>Y8</b></p>	<p>Use research to begin to explore 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>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>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>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>Select appropriate methods to evaluate their products in use and modify them to improve performance.</p> <p>Produce shorts reports making suggestions for improvements.</p> <p>Evaluate products that they are less familiar with using themselves.</p> <p>Evaluate products considering the life cycle analysis.</p> <p>Evaluate how products can be developed considering the concept of cradle to grave.</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 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>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>
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<p><b>Y7</b></p>	<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>Consider additional factors such as ergonomics and anthropometrics.</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>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 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>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 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 eg. 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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### Assessment Objectives Cooking and Nutrition

<b>KS3 Programmes of Study for cooking and nutrition</b>	<b>AO1: Understand health and safety relating to food and cookery</b>	<b>AO2: Understand and apply the principles of nutrition and health</b>	<b>AO3: Understand the source, seasonality and characteristics of a broad range of ingredients</b>	<b>AO4: Understand factors relating to food choice (so that they are able to feed themselves and others a healthy and varied diet).</b>	<b>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)</b>
Key messages, advice and explanatory notes (1-8) for schools	(Explanatory note 2)	(Explanatory notes 1 &4)	(Explanatory notes 5,7&8)	(Explanatory note 3 &6)	(Explanatory note 2)
Year 10	Be able to explain food safety legislation and the role of the Environmental Health Officer.  Know and understand the	Be able to analyse and evaluate diets and make recommendations for improving nutritional profile.	Know and understand how cooking methods affect the nutritional content of dishes  Know and understand why and how food is cooked and the	Know and understand how medical conditions determine food choices:  Cardiovascular, obesity, bone health, dental health, type 2 diabetes, iron deficiency anaemia bowel	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



	HACCP system and the purpose for food businesses.	Be able to calculate energy and nutritional content of recipes  Be able to explain health risks of an unbalanced diet and give sound nutritional advice on how to improve it	chemical and physical changes that occur.	disorders, allergies and intolerances.	electrical equipment, with confidence.  They are able to use presentation and food styling techniques independently.  Be able to accurately portion foods.
Year 9	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.	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.	Know and understand how processing affects the physical, sensory and nutritional properties of foods.	Know and understand how economic factors determine food choices and nutritional health:  High and low budgets  effects of food poverty  Know how to make informed choices about food from packaging and labelling.	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.
Year 8	Know and understand how to identify risks (food poisoning, cross contamination) and minimise hazards in the cooking environment.  Know and understand the difference between	Know and understand how nutritional requirements differ for specific groups of people (Life stages, allergies and intolerances)  To understand how nutritional information and allergy advice on food packaging can be	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:  Religion  Vegetarian/vegan  Fair trade	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

	<p>use by and best before dates)</p> <p>Know and understand the principles of safe storage, cooking and reheating foods.</p>	<p>used to help make healthy choices (traffic lights).</p>		<p>Animal welfare</p> <p>Advertising/marketing.</p>	<ul style="list-style-type: none"> <li>- Blending</li> <li>- Frying</li> <li>-Whisking</li> <li>-Seasoning</li> <li>-Test for readiness</li> </ul>
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"> <li>-Weighing/measuring</li> <li>-Knife skills (bridge/ claw)</li> <li>-Peeling</li> <li>- Segmenting</li> <li>-Boiling/ simmering</li> <li>-Rubbing in</li> <li>-Creaming/ all-in-one</li> <li>- Melting</li> <li>- Folding</li> <li>- Baking</li> </ul>

## How can Design Technology support your future?

Of course, we offer the study of BTEC and 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 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 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 1 lesson per week	YEAR 8 1 lesson per week
	Students in year 7 and 8 have one single lesson of D&T a week. All groups will do 30 weeks in Textiles and 8 weeks in RMT over the course of a year. The 'Cooking & Nutrition' element of the Knowledge Rich Curriculum for Design & Technology is partly delivered through the Health & Wellbeing curriculum.	
Autumn Term 1	<p><b><u>Introduction to Technology</u></b></p> <ul style="list-style-type: none"> <li>● Health and safety</li> <li>● Basic equipment</li> <li>● Use of sewing machine and hand sewing techniques</li> <li>● Uses of textiles</li> <li>● Categorising fibres. [KiP]</li> <li>● Health and safety in Food</li> <li>● Basic equipment in Food</li> </ul>	<p><b><u>Cultural Cushions</u></b></p> <ul style="list-style-type: none"> <li>● Introduction to design task.</li> <li>● Analysis of existing cushions [KiP]</li> <li>● Investigate the potential user of the cushion.</li> <li>● Investigate a range of designers / cultural influences.</li> <li>● Analysis of research</li> <li>● Plan and create a specification for a creative cultural cushion. [KiP]</li> </ul>
Autumn Term 2	<p><b><u>Printing &amp; Quilting project</u></b></p> <ul style="list-style-type: none"> <li>● Introduction to design task</li> <li>● Analysis of existing products [KiP]</li> <li>● Smart materials</li> <li>● Write simple specification [KiP]</li> </ul>	<ul style="list-style-type: none"> <li>● Decorative techniques – sublimation printing/heat press, applique</li> <li>● Use theme boards of existing designers/ cultural influences to develop a range of design ideas. CAD.</li> <li>● Evaluate design ideas against the specification and identify which to make. [KiP]</li> </ul>
Spring 1	<ul style="list-style-type: none"> <li>● Designing by adapt the basic pattern pieces</li> <li>● Use CAD to develop repeat patterns based on research homework.</li> <li>● Printing samples - modelling of block printing, stencilling, fruit &amp; vegetable and potato printing</li> <li>● Evaluation of ideas.</li> <li>● Final design [KiP]</li> </ul>	<ul style="list-style-type: none"> <li>● Produce final design.</li> <li>● Plan for making including list of materials and equipment + flow chart (GANTT chart)</li> <li>● Pattern making.</li> <li>● Cutting fabrics.</li> </ul>

Spring 2	<ul style="list-style-type: none"> <li>• List equipment and materials needed for their planning.</li> <li>• Flowchart for making [KiP]</li> <li>• Pattern cutting</li> <li>• Printing</li> </ul>	<ul style="list-style-type: none"> <li>• Plain seams + pressing seams open.</li> <li>• Sublimation printing + Applique</li> <li>• Making of piped edges - zipper feet and adjusting settings of sewing machines.</li> <li>• Adding zips. [KiP]</li> </ul>
Summer 1	<ul style="list-style-type: none"> <li>• Pinning, tacking</li> <li>• Machine stitching quilting lines</li> <li>• Adding bias binding</li> <li>• Evaluation against specification [KiP]</li> </ul>	<ul style="list-style-type: none"> <li>• Batch production on cushion fillers.</li> <li>• Evaluation and testing against specification. [KiP]</li> </ul> <p>Resistant materials AO5 - Theory only</p> <ul style="list-style-type: none"> <li>• using sensors to detect heat, light e.g. thermistors and light dependant resistors.</li> <li>• using computers and electronics to embed intelligence in products.</li> </ul>
Summer 2	<p>Resistant materials AO5 - Theory only</p> <ul style="list-style-type: none"> <li>• Classifying materials - hardwoods, softwoods, ferrous and nonferrous, thermoplastic and thermosetting plastics.</li> <li>• Physical properties of materials</li> <li>• Shaping plastics - moulds</li> <li>• Simple electronic circuits [KiP]</li> </ul>	<p>Resistant materials AO5 - Theory only</p> <ul style="list-style-type: none"> <li>• controlling outputs - actuators and motors [KiP]</li> </ul>

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 an 8 week rotation.

**2020-21 Year Plan - Year 7 - Health & Nutrition**

Year 7 Health & Nutrition	Year 8 Health & Nutrition
<ul style="list-style-type: none"> <li>• Eatwell guide:</li> <li>- introduction to sections + Fruits &amp; vegetables (5 -a-day campaign)</li> <li>- carbohydrates /energy balance</li> <li>- dairy</li> <li>- protein</li> <li>- oils and spreads</li> <li>- fibre <ul style="list-style-type: none"> <li>• 8 tips for healthy eating</li> <li>• Rethink your drink</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>• Staple foods and importance of breakfast</li> <li>• Cooking methods and the effects on nutrients.</li> <li>• Factors affecting food choices</li> <li>• Advertising and marketing</li> <li>• Labelling</li> <li>• Diet related illness</li> <li>• Making healthy choices</li> </ul>

Learn to cook a range of healthy snacks developing the following skills:

- Weighing/ Measuring
- Knife Skills
- Oven/ Grill management
- Coating
- Peeling
- Boiling
- Frying
- Simmering
- Baking
- Blending
- Segmenting
- Test for readiness

Learn to cook a range of healthy family meals developing the following skills:

- Creaming
- All in One
- Melting
- Baking
- Making/ Shaping dough
- Sauce making
- Whisking
- Seasoning

### DESIGN AND TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW

Hospitality and Catering	Year 9	Year 10
Autumn Term 1	The hospitality and Catering industry - LO1 The structure of the hospitality industry.  Develop practical skills	Controlled Assessment Task Function and source of nutrients. Dietary requirements of different groups. Cooking methods Practice CAT (AC1.1,1.2, 1.3, 1.4)
Autumn Term 2	The hospitality and Catering industry - LO1 Job requirements and working conditions. Factors affecting success in the Hospitality industry.  Develop practical skills	Controlled Assessment Task Factors to consider when planning menus. Environmental issues. How dishes meet customer needs. Plan production of dishes (AC2.1,2.2,2.3,2.4)
Spring 1	Food Hygiene - LO4:Know how food can cause ill health  Develop practical skills	Controlled Assessment Task



Spring 2	Personal safety - LO3:Understand how hospitality and catering provision meets health and safety requirements.  Develop practical skills	Controlled Assessment Task
Summer 1	The hospitality and catering industry - LO2 Understand how hospitality and catering provisions operate.  Practical skills. LO5 - Review and recommend options for hospitality provision	Revision for written exam
Summer 2	Revision and exam preparation.	Revision for written exam

### DESIGN AND TECHNOLOGY CURRICULUM PROGRESSION OVERVIEW

Child Development	Year 9	Year 10	Year 11
Autumn Term 1	RO18 - Reproduction and the roles and responsibilities of parenthood	RO19 LO1 - Equipment for babies from 0 - 12 months	RO20 LO3 - Plan different play activities for a chosen development area for a child from birth to 5 years.
Autumn Term 2	RO18 - Antenatal care and preparation for birth	Revision and exam preparation	RO20 LO4 - Carry out and evaluate planned play activities.
Spring 1	RO18 - Postnatal checks, postnatal provision and conditions for development	January Exam  RO19 LO2 - Equipment for children from 1 - 5 years	RO19 LO4 - Investigation into feeding options for 0 - 6 months
Spring 2	RO18 - Recognise, manage and prevent childhood illnesses.	RO19 LO3 - Nutritional needs of children from 0 - 5 years	Revision and exam preparation for resits.
Summer 1	RO18 - Child safety	RO20 LO1 - Development stages from 0 - 5 years	

Summer 2	RO19 LO1 - Equipment for babies from 0 - 12 months	RO20 LO2 - Types and benefits of play.	
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