

Curriculum Overview 2024-25 KS3 Technology Subjects

Curriculum overview for Year 7

Technology Subject	Textiles	Product Design	Graphics
<p>Curriculum Content:</p> <p>Priority Essential knowledge and skills that will be taught.</p>	<p>Introduction to Textiles: design and manufacture of a themed stuffed toy</p> <p>Prior Learning Dependent on the capacity, facilities, and capabilities of the Primary School to cover NC KS2 Food. All students have a variety of experiences and skills. Our starting point provides for a diversity of understanding and practice. Pupils complete technology subjects in a rotation (approximately 18 hours of learning in each technology discipline per year). The order in which pupils complete each technology subject in impacts prior knowledge.</p> <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Know and understand how to be safe in a practical Textiles environment • Know and understand how to generate and communicate design ideas for a product in response to a design brief • Know and understand what the basic pieces of textiles equipment are and how to use them safely, independently, and accurately to manufacture a product (needles, pins, 	<p>Introduction to DT: manufacture of a desk-tidy</p> <p>Prior Learning Dependent on the capacity, facilities, and capabilities of the Primary School to cover NC KS2 Food. All students have a variety of experiences and skills. Our starting point provides for a diversity of understanding and practice. Pupils complete technology subjects in a rotation (approximately 18 hours of learning in each technology discipline per year). The order in which pupils complete each technology subject in impacts prior knowledge.</p> <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Know and understand how to be safe in a practical workshop environment • Know and understand how to safely, independently and accurately use a range of workshop equipment for marking-out, shaping, forming and joining timbers, metals, and polymers (steel-rule, try-square, tenon saw, hacksaw, centre punch, scribe, hand-drill, pillar-drill, twist and Forstner bits, band-facer, sand-paper, G- 	<p>Introduction to Graphics and CAD: design and manufacture of a cardboard craft kit</p> <p>Prior Learning Dependent on the capacity, facilities, and capabilities of the Primary School to cover NC KS2 Food. All students have a variety of experiences and skills. Our starting point provides for a diversity of understanding and practice. Pupils complete technology subjects in a rotation (approximately 18 hours of learning in each technology discipline per year). The order in which pupils complete each technology subject in impacts prior knowledge.</p> <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Know and understand how to be safe in a practical graphics environment • Know and understand how to safely, independently and accurately use a range of equipment for marking-out, cutting and joining card (drawing-board, set-square, ruler, craft-knife, cutting mat and safety rule)

	<p>thread, fabrics, scissors, sewing machine, quick-unpicks and buttons)</p> <ul style="list-style-type: none"> • Know and understand what the basic decorative and constructional techniques used to manufacture textiles products are (embroidery, applique, patterns, and templates, pinning and tacking) <p>Skills:</p> <ul style="list-style-type: none"> • Be able to safely, independently, and accurately, handle and use basic textiles equipment to manufacture a product • Be able to generate and communicate design ideas for a product • Be able to use basic hand embroidery stitches and applique for decorative purposes • Be able to use templates, patterns and pinning and tacking for constructional purposes 	<p>clamp, machine-vice, line-bender, thermo-forming oven, jigs, templates, formers, wood glue, wood screws, nuts and washers)</p> <ul style="list-style-type: none"> • Know and understand what the characteristics and applications of different categories and types of wood, metal, and polymer are and what the environmental impacts of each are <p>Skills:</p> <ul style="list-style-type: none"> • Be able to safely, independently, and accurately, handle and use a range of workshop equipment to manufacture a product • Be able to mark-out by using rules, try-squares, scribes, centre-punches and templates • Be able to shape timbers, metal and thermoforming polymers using saws, abrasives, drills, and thermo-forming equipment 	<ul style="list-style-type: none"> • Know and understand how to generate and communicate design ideas for a product in response to a design brief • Know and understand how to communicate, develop and plan design ideas using an orthographic drawing • Know and understand what a net is and what the characteristics of nets are • Know and understand how to calculate the dimensions of a product in order to fulfil functional, material and constructional constraints • Know and understand what Computer Aided Design (CAD) and Computer Aided Manufacture (CAM) are and how they can be used to assist in the production of a product • Know and understand what the characteristics and applications of different categories and types of paper and card are and what the environmental impacts of each are <p>Skills:</p> <ul style="list-style-type: none"> • Be able to safely, independently, and accurately, handle and use basic equipment to manufacture a product • Be able to communicate, develop and plan a design idea using an orthographic drawing • Be able to use drawing equipment and basic tools to manufacture a net • Be able to use CAD to develop and manufacture a net
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	<p>Future links:</p> <ul style="list-style-type: none"> • Knowledge of practical textiles environment health and safety and tool and equipment health and safety applied, and further developed, in other technology subjects and contexts during KS3 and KS4 and beyond – developing pupil confidence and independence. • Ability to record, communicate and develop ideas applied, and further developed, in other technology subjects and contexts during KS3 and KS4 • Knowledge of correct use of and experience in the use of a range of basic textiles tools, equipment, processes, and construction techniques enables pupils to manufacture products with increasing accuracy and proficiency during KS3 textiles and KS4 GCSE DT and beyond the classroom 	<ul style="list-style-type: none"> • Be able to use production aids such as templates, jigs, and formers to increase working accuracy • Be able to join materials using glue, screws, and nuts/bolts/threaded bar <p>Future links:</p> <ul style="list-style-type: none"> • Knowledge of workshop, tool and equipment health and safety applied, and further developed, in other technology subjects and contexts during KS3 and KS4 and beyond • Knowledge of correct use of and experience in the use of a range of basic tools, equipment, jigs, and templates enables pupils to manufacture products with increasing accuracy and proficiency during KS3 DT and KS4 GCSE DT and beyond • Knowledge of materials in KS4 GCSE DT beyond the classroom 	<p>Future links:</p> <ul style="list-style-type: none"> • Knowledge of practical environment, tool and equipment health and safety applied, and further developed, in other technology subjects and contexts during KS3 and KS4 and beyond • Knowledge of correct use of and experience in the use of basic tools, equipment and marking-out/measuring methods enables pupils to manufacture products with increasing accuracy and proficiency during KS3 DT and KS4 GCSE DT and beyond • Ability to analyse and respond to a design brief creatively applied, and further developed, in other technology subjects and contexts during KS3 and KS4 GCSE DT • Knowledge of basic 2D CAD commands applied, and further developed, in year 8 DT and KS4 GCSE DT. • Knowledge of how to produce orthographic and isometric drawings to record and develop ideas applied, and further developed, in KS3 DT and KS4 GCSE DT. • Ability to calculate the dimensions of a product to fulfil functional, material, and constructional constraints applied, and further developed, in other technology subjects and contexts during KS3 and KS4
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Assessment	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon designing and manufacturing skills. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Designing 2. Health and safety 3. Manufacturing 4. Technical knowledge (key concepts, principles, terms, processes, and equipment) 	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon safe working practice and manufacturing skills. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Health and safety 2. Manufacturing 3. Technical knowledge (key concepts, principles, terms, processes, and equipment) 	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon designing (communicating ideas) and manufacturing skills. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Designing 2. Health and safety 3. Manufacturing 4. Technical knowledge (key concepts, principles, terms, processes, and equipment)

Curriculum overview for Year 8

Technology Subject	Textiles	Product Design	Food
<p>Curriculum Content:</p> <p>Priority Essential knowledge and skills that will be taught.</p>	<p>Design and manufacture of a graffiti themed draw-string bag</p> <p>Prior Learning:</p> <ul style="list-style-type: none"> • Health and safety in practical textiles environment • Recording, communicating, and developing design ideas • Identifying and correctly using a range of basic textiles tools, equipment, processes, and construction techniques (embroidery, applique, patterns, and templates, pinning and tacking) <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Recall, development, and application in a new context: know and understand how to be safe in a textiles practical environment including when heat sources and liquids are present • Recall, development, and application in a new context: know and understand how to generate, communicate, and develop design ideas for a product with both decorative and functional features in response to a design brief 	<p>Design and manufacture of a wooden mechanical toy</p> <p>Prior Learning:</p> <ul style="list-style-type: none"> • Workshop, tool and equipment health and safety • Identification and correct use of a range of basic tools, equipment, jigs, and templates • Knowledge of materials properties • Analysing and responding creatively to a design brief • Basic 2D CAD commands • Basic orthographic and isometric drawings to record and develop ideas • Calculating the dimensions of a product to fulfil functional, material, and constructional constraints <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Recall, development, and application in a new context: know and understand how to be safe in a practical workshop environment • Recall, development, and application in a new context: know and understand how to safely, independently, and accurately, use a range of workshop equipment, resources, and components for: marking-out, shaping, and joining timbers (steel-rule, try-square, tenon saw, coping-saw, centre punch, hand-drill, pillar-drill, twist drill-bit, band- 	<p>Introduction to basic health and safety; basic practical skills and equipment; dough; food science (raising agents); nutrition; and food choices.</p> <p>Prior Learning</p> <p>Dependent on the capacity, facilities, and capabilities of the Primary School to cover NC KS2 Food. All students have a variety of experiences and skills. Our starting point provides for a diversity of understanding and practice.</p> <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Know and understand how to be safe in a food preparation environment including basic principles of hygiene and safe use of knives and other basic equipment • Know and understand how to measure-out, weigh-out and prepare a range of basic equipment and ingredients to make a variety of predominantly savoury dishes, specifically: a basic chilli or bolognaise sauce; a scone-based pizza; pancakes and Yorkshire puddings (batters); sausage rolls; and carrot cakes.

	<ul style="list-style-type: none"> Recall, development, and application in a new context: know and understand what the basic and more advanced pieces of textiles equipment are and how to use them safely, independently, and accurately to manufacture a product (including overlockers, irons, sublimation printer, batik and dyeing equipment) Know how to apply decoration to the surface of fabrics using block printing, tie-dye, batik, and sublimation printing Recall, development, and application in a new context: know and understand how to use basic and more advanced decorative and constructional techniques and components to manufacture a textiles product with functional features (embroidery, machine embroidery, applique, patterns and templates, pinning, tacking, bands, drawstrings, and eyelets) <p>Skills:</p> <ul style="list-style-type: none"> Be able to independently, safely, and accurately, handle and use a wider range textiles equipment and processes Be able to generate, communicate and develop design ideas for a product Be able to use a wider range of pieces of textiles equipment to manufacture a product 	<p>facers, G-clamp, templates, wood glue, hot glue, dowel, dowel joints, bench-hook, and nails)</p> <ul style="list-style-type: none"> Know and understand what the basic types of motion are (linear, rotary, reciprocating and oscillating) Know and understand what the function and characteristics of cams and followers are Recall, development and application in a new context: know and understand how to communicate, develop and plan a design for a product with multiple rectilinear and rectangular components using isometric and orthographic drawings (scale drawings) Recall, development and application in a new context: know and understand what Computer Aided Design (CAD) and Computer Aided Manufacture are and how they can be used to assist in the production of a product Recall and consolidation from Y7: knowledge of material categories and types (timbers, metals, polymers, cards and papers) <p>Skills:</p> <ul style="list-style-type: none"> Be able to safely, independently, and accurately, handle and use a range of workshop equipment to manufacture a product Be able to mark-out by using rules, try-squares, scribes, centre-punches and templates 	<ul style="list-style-type: none"> Know and understand how to use a knife safely, independently and accurately Know and understand how to use the hob and oven for simmering, boiling, frying and baking. Know and understand how to produce and manipulate basic pastry doughs: scone-based pizza dough and shortcrust pastry Know and understand what raising agents are and how they affect foods Know and understand the basic principles of nutrition (Eat Well Guide and UK government dietary guidelines) Know and understand what factors can affect food choices <p>Skills:</p> <ul style="list-style-type: none"> Be able to: independently, safely, and accurately prepare and use a variety of basic ingredients using a variety of pieces of basic equipment including knives, ovens, and hobs Be able to weigh-out dry ingredients by weight and liquids by volume
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- Be able to use a wider range of processes for decorative purposes: hand embroidery, machine embroidery, applique, batik, tie-dye, and sublimation printing
- Be able to use templates, patterns and pinning, tacking, seams, hems, bands, drawstrings and eyelets for constructional purposes or as functional features

Future links:

- Consolidation of health and safety further develops pupils' ability to work safely, independently, and confidently during year 9 Technology, KS4 GCSE DT and beyond the classroom
- Generating, communicating, and developing design ideas for a product with both decorative and functional features in response to a design brief in new and different contexts during year 9 textiles, KS4 GCSE DT and beyond the classroom
- Knowledge of correct use of a wider range of more advanced tools, equipment, processes, methods of construction and assembly enables pupils to manufacture products with increasing independence, creativity, functionality, accuracy, and proficiency in new and different contexts

- Be able to shape timbers using saws, abrasives, and drills
- Be able to join materials using a dowel-joint, wood-glue, nails, and hot glue
- Be able to assemble several components together with a high tolerance into a functional product with dynamic components and features
- Be able to fault-find and fault-fix
- Be able to communicate, develop and plan a design idea using the orthographic method (scale drawing)
- Be able to use basic 2D CAD tools to create a component CAD drawing file which can be processed by a CAM laser cutter

Future links:

- Consolidation of health and safety further develops pupils' ability to work safely, independently, and confidently during year 9 Technology, KS4 GCSE DT and beyond the classroom
- Knowledge of correct use of and experience in the use of a wider range of tools, equipment, processes, methods of construction and assembly enables pupils to manufacture products with increasing independence, creativity, functionality, accuracy, and proficiency in new and different contexts during year 9 DT and KS4 GCSE DT and beyond the classroom
- Knowledge of motion, cams, and followers in KS4 GCSE DT

- Be able to use a knife safely, independently, and accurately
- Be able to produce and form basic doughs (scone-based pizza dough and short-crust pastry dough)
- Be able to produce a dish using a raising agent (food science practical)
- Be able to explain what the Eat Well guide is. Be able identify a range of vegetables fruits, carbohydrate, protein, dairy, and high fat foods and be able to explain what proportion of a typical individual's diet each food group should form
- Be able to identify some of the factors which affect an individual's dietary choices and needs

Future links:

- Increased awareness of health, safety, and hygiene applied, and further developed, in year 9 food, KS4 GCSE Food and Nutrition and beyond the classroom.
- Students to be independently use and explain basic principles of food preparation in Y9 food, KS4 GCSE Food and Nutrition and beyond the classroom
- Apply knowledge and awareness of ingredients from creating a range of mainly savoury dishes in similar dishes/contexts
- Making other and more challenging doughs (e.g. bread dough in year 9)
- Apply principles of healthy eating to design and development of dishes in KS4 GCSE Food Preparation and Nutrition and beyond the classroom

	during year 9 textiles, KS4 GCSE DT and beyond the classroom	<ul style="list-style-type: none"> • Knowledge of basic Computer Aided Design commands (CAD) and Computer Aided Manufacture applied, and further developed, in year 9 DT (3D CAD and 3D printing) and KS4 GCSE DT • Knowledge of materials in KS4 GCSE DT 	<ul style="list-style-type: none"> • Be able to apply knowledge of dietary choices and needs in KS4 GCSE Food Preparation and Nutrition
Assessment	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon health and safety and manufacturing skills. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Designing 2. Health and safety 3. Manufacturing 4. Technical knowledge (key concepts, principles, terms, processes, and equipment from Y7 and Y8 textiles) 	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon designing (communicating ideas) and manufacturing skills. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Designing 2. Health and safety 3. Manufacturing 4. Technical knowledge (key concepts, principles, terms, processes, and equipment from Y7 and Y8 DT and Graphics) 	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon health and safety and making skills. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Health and safety 2. Making skills (selecting and preparing ingredients; using utensils and equipment; applying heat in different ways) 3. Technical knowledge (key concepts, principles, terms, processes, and equipment from Y8 and Y9 food)

Curriculum overview for Year 9

Technology Subject	Textiles	Product Design	Food
<p>Curriculum Content:</p> <p>Priority Essential knowledge and skills that will be taught.</p>	<p>Design and manufacture challenge: storage of small personal belongings</p> <p>Prior Learning</p> <ul style="list-style-type: none"> • Health and safety in practical textiles environment including when heat sources and liquids are present • Generating, communicating, and developing design ideas for a product with both decorative and functional features in response to a design brief • Identifying, selecting and using basic and more advanced pieces of equipment, safely, independently, and accurately. • Manufacturing a product with more advanced decorative, constructional, functional features (e.g. embroidery, machine embroidery, applique, block printing, sublimation printing, batiq, tie-dye patterns, templates, pinning, tacking, bands, drawstrings, and eyelets) <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Recall, development, and application in a new context: know and understand how to be safe in a textiles practical environment including when heat sources and liquids are present • Know how to use research and exploration to understand user needs 	<p>Design and manufacturing challenge: jewellery design</p> <p>Prior Learning:</p> <ul style="list-style-type: none"> • Workshop, tool and equipment health and safety • Identification and correct use of a range of basic tools, equipment, jigs, and templates • Knowledge of materials properties • Analysing and responding creatively to a design brief • Basic 2D CAD commands • Producing isometric drawings of objects with multiple rectilinear and rectangular components and scale 1:2 orthographic drawings (scale drawings) • Calculating the dimensions of a product to fulfil functional, material, and constructional constraints <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Know and understand what design contexts are and how they can be analysed, identifying possible foci and factors for consideration for a project • Know what anthropometrics are and how to gather anthropometric data which can inform design decisions 	<p>Developing knowledge of health and safety; practical skills and equipment; dough; food science (sugars); nutrition; and food choices (seasonality).</p> <p>Prior Learning:</p> <ul style="list-style-type: none"> • Know how to apply basic health, safety, and hygiene principles in a food preparation environment • Be able to select, weigh-out, prepare and cook a variety of basic ingredients using basic cooking methods to produce a range of predominantly savoury dishes <p>Key Knowledge:</p> <ul style="list-style-type: none"> • Recall and development: know and understand how to be safe in a food preparation environment including principles of hygiene and safe use of equipment. • Recall, development, and application in new contexts: know and understand how to measure-out, weigh-out and prepare a

	<ul style="list-style-type: none"> • Know how to identify and solve own design problems and understand how to reformulate problems given • Know how to develop a specification to inform the design of an innovative, functional, appealing products that respond to needs of others • Recall, development, and application in a new context: know and understand how to generate, communicate (using drawings, models, and CAD) and develop design ideas which are not stereotypical and which combine a wide range of decorative and constructional features, techniques and processes • Know and understand how to apply knowledge and understanding of textiles techniques to solve a design problem and develop a solution to a design problem • Know and understand how to develop a design solution made of multiple components and how to manufacture a corresponding textiles component pattern • Recall, development, and application in a new context: know and understand how to use and combine a wide variety of basic and more advanced equipment, processes, techniques and components previously learnt to a high level of accuracy and independence, as well as being able to set-up and thread a sewing machine, use CAD to create repeat patterns, use a heat press for image transfer, pinking shears, zips, linings and pockets 	<ul style="list-style-type: none"> • Know how to analyse the work of others to gather information which can be used to inform the design process • Know how to identify and solve own design problems and understand how to reformulate problems given • Know how to develop a specification to inform the design of an innovative, functional, appealing products that respond to needs of others • Know and understand how to produce accurate 3D drawings of irregular, circular and curved forms using isometric crating • Know and understand a range of strategies that can be used to help generate imaginative, creative, and innovative design ideas taking into consideration both function and aesthetics • Know and understand what 3D CAD is and how to use a variety of basic 3D CAD tools to create a CAD model of a design prototype which can be used create a 3D printed output and/or as 2D image which can be used to communicate a design concept • Know and understand what 3D printing is, what its characteristics are and what its advantages and disadvantages are • Recall, development and application in a new context: know and understand how to safely, independently, and accurately, handle and use a range of workshop equipment to mark-out, shape and assemble several components together 	<p>range of basic and more advanced equipment and ingredients to make a variety of predominantly savoury dishes of increased complexity and challenge, specifically: bread-based pizza, fresh pasta, chicken curry; cakes (food science practical - effect of using different types of sugar) and cheesecake</p> <ul style="list-style-type: none"> • Recall, development, and application in new contexts: know and understand how to use the hob and oven for simmering, boiling, frying, and baking • Know and understand how to produce and manipulate more challenging doughs: bread-based pizza dough and pasta dough pastry • Know and understand how different types of sugar can affect the structure of a cake • Know and understand the causes and types of food poisoning and the impact of temperature upon bacteria • Know and understand some of the basic principles of poultry preparation – safely, hygienically, and economically de-bone a lower-cost cut • Know and understand what the function of different nutrients are in the body and what foods provide each type of nutrient • Know and understand how seasonality can impact food choices
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with a high tolerance into a functional product

- Know how to calculate quantities of materials using mathematical modelling
- Know and understand how to evaluate ideas and prototypes using a design specification to inform judgements
- Know how computing and electronics can be used to embed intelligence in products using programmable microcontrollers

Skills:

- Be able to analyse a design context and identify foci and factors for consideration in subsequent design stages
- Be able to gather anthropometric data and use to inform design decision making
- Be able to gather information from the analysis of the work of others which informs design thinking and decision making
- Be able to write a design brief and design specification
- Be able to communicate, develop and evaluate ideas using 3D isometric crating sketching, modelling, CAD, and the written form
- Be able to generate imaginative, creative, and innovative design ideas using a range of strategies to avoid design fixation and take into consideration both functional and aesthetic requirements
- Be able to manufacture a product safely, independently, and precisely using

Skills:

- Be able to analyse a design context and identify foci and factors for consideration in subsequent design stages
- Be able to carry-out primary and secondary research gathering information which will inform the design brief and design specification points and subsequent design and development phases
- Be able to independently, safely, and accurately, handle and use a wide range of basic and more advanced textiles equipment and processes
- Be able to use drawings, models, and CAD to generate, communicate and develop design ideas for a product which utilises and combines a range of decorative and functional features and processes
- Be able to accurately and independently use a wide range of basic and more advanced pieces of textiles equipment, processes, and techniques to manufacture a product

Skills:

- Be able to independently, safely, and accurately prepare, and use, a wider variety of ingredients using a wider variety of equipment such as: poultry; pasta making equipment; and blenders
- Be able to accurately and independently measure-out dry ingredients by weight and liquids by volume
- Be able to produce and form more challenging types of dough (bread-based pizza dough and pasta dough)
- Be able to safely, independently, and efficiently de-bone a piece of poultry
- Be able to produce more complex dishes which require a wide range of processes and ingredients (e.g., cheesecake and chicken curry)
- Be able to explain what the causes and types of food poisoning are and how to mitigate against them
- Be able to explain what the function of different types of nutrients are in the body

	<ul style="list-style-type: none"> • Be able to produce hand embroidery stitches and applique of a high standard for decorative purposes • Be able to use templates, patterns and pinning and tacking for constructional purposes <p>Future Links:</p> <ul style="list-style-type: none"> • Consolidation of health and safety further develops pupils' ability to work safely, independently, and confidently during KS4 GCSE DT and beyond the classroom • Skills in researching, exploring, and understanding user needs; identifying and solving own design problems; understanding how to reformulate problems given; and developing a specification to inform the design of an innovative, functional, appealing products that respond to needs utilised by pupils who go on to study KS4 GCSE Design and Technology • Skills in generating, communicating, and developing design ideas for a product utilised by pupils who go on to study KS4 GCSE Design and Technology 	<p>specialist tools, techniques, processes, equipment, and machinery, including computer-aided manufacture</p> <ul style="list-style-type: none"> • Be able to use mathematical modelling to calculate the quantity of material required to make a product • Be able to evaluate ideas and prototypes using a design specification to inform judgements • Be able to use a computer to embed intelligence into a product using programmable components (a micro-controller) <p>Future Links:</p> <ul style="list-style-type: none"> • Consolidation of health and safety further develops pupils' ability to work safely, independently, and confidently during KS4 GCSE DT and beyond the classroom • Skills in investigating contexts; researching; identifying anthropometric data; identifying and solving own design problems; understanding how to reformulate problems given; and developing a specification to inform the design of an innovative, functional, appealing products that respond to needs utilised by pupils who go on to study KS4 GCSE Design and Technology • Isometric drawing skills used in KS4 GCSE DT • Ability to use a range of strategies to help generate imaginative, creative, and innovative design ideas taking into 	<p>are and what types of food can provide those nutrients</p> <ul style="list-style-type: none"> • Be able to identify and explain some of the factors which affect an individual's food choices relating seasonality and dietary needs <p>Future Links:</p> <ul style="list-style-type: none"> • Students will have a basis to enable them to work safely when working with knives by demonstrating correct holding techniques. • Knowledge of safe and hygienic working practise for the future preventing food poisoning, illness and by reducing injury. • Students will be able to make better informed choices about dietary needs and apply theory when choosing foods needed for a healthy balanced diet. • Those who go on to study at GCSE will be able to build on their technical skills further by demonstrating more complex dishes for example deboning a chicken thigh in Year 9 to a full carcass in Year 10. • Demonstrate a greater acceptance of other people's needs and the reasons why certain foods are not eaten. • Start to apply scientific principles as to why foods work in a certain way and then
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	<ul style="list-style-type: none"> • Problem solving skills used in KS4 GCSE Design and Technology and beyond classroom • Knowledge of correct use of a wider range of more advanced tools, equipment, processes, methods of construction and assembly enables pupils to manufacture products with increasing independence, creativity, functionality, accuracy, and proficiency in new and different contexts KS4 GCSE DT and beyond 	<p>consideration both function and aesthetics used KS4 GCSE DT</p> <ul style="list-style-type: none"> • Knowledge of correct use of and experience in the use of a wider range of tools, equipment, processes, methods of construction and assembly enables pupils to manufacture products with increasing independence, creativity, functionality, accuracy, and proficiency in new and different contexts during KS4 GCSE DT and beyond the classroom • Knowledge of 3D CAD/CAM and 3D printing (characteristics, applications and impact) used in KS4 GCSE DT • Ability to use mathematical modelling to calculate quantities of materials used GS\$ GCSE DT and beyond classroom • Ability to evaluate an idea or prototype used in KS4 GCSE DT and beyond classroom 	<p>choosing correct ingredients due to their properties and functions.</p>
<p>Assessment</p>	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon designing and manufacturing. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Designing 2. Manufacturing 3. Evaluating 4. Technical knowledge (key concepts, principles, terms, processes, and equipment from Y7, Y8 and Y9 Textiles) 	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon designing and evaluating. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Designing 2. Manufacturing 3. Evaluating 4. Technical knowledge (key concepts, principles, terms, processes, and equipment from Y7, Y8 and Y9 DT and CAD/Graphics) 	<p>Pupils will be provided with formative verbal feedback throughout and formative written feedback upon making skills and s. At the end of the project summative assessment of pupils' mastery of the following key knowledge and skills is completed:</p> <ol style="list-style-type: none"> 1. Health and safety 2. Making skills (selecting and preparing ingredients; using utensils and equipment; applying heat in different ways) 3. Technical knowledge (key concepts, principles, terms, processes, and equipment from Y8 and Y9 food)