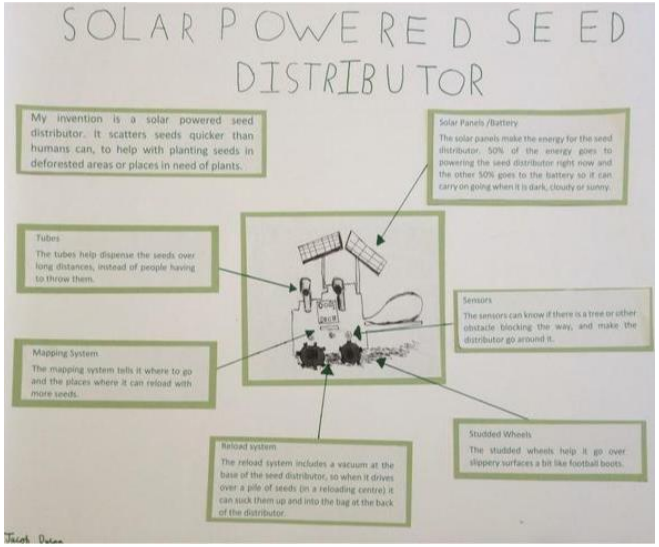
Design and Technology at Parkgate Juniors

At Parkgate, Design and Technology provides an opportunity for children to develop skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. We encourage children's creativity through practical challenges and provide opportunities for them to investigate, evaluate, design and make functional products – that work!

D&T is important to us because of the invaluable skills that it teaches that can be transferred and used across school subjects as well as in the real word. PROBLEM SOLVING is at the heart of our DT!



Design and Technology - policy on a page

Purpose and Aims

Purpose

- To develop an understanding of technological processes, products and their manufacture, alongside creative thinking, through opportunities for pupils to follow the design process in a practical environment.

Aims

- To develop creative thinking.
- To provide practical experiences for developing skills of planning, developing and evaluating.
- To encourage independence when applying skills in real life situations.
- To develop an understanding of technological processes, products and their manufacture.
- To encourage the use of a wide range of tools and techniques.

Provision

Our curriculum is categorised in two ways:

- **Breadth** – which allows children to use a range of equipment and techniques in cross-curricular lessons that allow connections to be made between subjects.
- **Depth** – which encourages children to make independent choices and think creatively to solve problems, as well as apply their knowledge in real life contexts.

Progression

Progression

Topic maps outline what is to be taught each term.

At the start of KS2 pupils begin to develop their D&T skills with a large amount of support and in a stimulating context. Later on in KS2 pupils begin to apply their knowledge learned in real life contexts. Progression can be seen in the planning of the class teacher. They include specific learning objectives and details about how lessons will be taught and the skills involved.

Assessment and reporting

Teachers assess pupil's work in D&T informally using our AfL policy. D&T is reported on as part of each pupil's end of year report.

Design and Technology

Intent

Aims/ Statement of Intent:
At Parkgate, Design and Technology provides an opportunity for children to develop skills and knowledge in design, structures, mechanisms, electrical control and a range of materials, including food. We encourage children's creativity through practical challenges and provide opportunities for them to investigate, evaluate, design and make functional products – that work! D&T is important to us because of the invaluable skills that it teaches that can be transferred and used across school subjects as well as in the real word.

Knowledge and skills:
Design—Be able to research, develop, communicate ideas effectively. Make—Select and use a range of tools and equipment as well as tolls, equipment and components, Evaluate—Investigate and analyse existing products, evaluating their own ideas. . Technical knowledge—Apply their understanding of structures, mechanical systems, electrical systems. Understand an apply principals of a balanced diet, prepare and cook dishes using a range of techniques. To have an understanding of the 'design, make and evaluate' process.

Implementation

Approaches to learning/How our pupils learn:
Opportunities to practice using a range of tools and equipment. Following the design, make and evaluation to design, make and evaluate. Use real and relevant problems with various contexts. Draw on other subject disciplines.

Support:
Scaffolded resources for the design, make and evaluation when designing and evaluating. Modelling tools and CAD for planning and support

Enrichment (including link and opportunities):
Cross curricular week, whole school projects linked to STEM competitions (with Science), Homework , Themed days, STEM visitors and parent's jobs talks, assemblies.

Impact

Skills:
Use tools and equipment safety and responsibly and with increased accuracy and confidence. Be confident and independent in following the design, make and evaluation process. To apply their understand in a range of contexts.

Attitudes/ wellbeing and personal development:
Resilience, Curiosity about how the world works around them and have a critical approach towards the impact of Design Technology in the real world, have an explorative approach towards the function of everyday

Book study method	Books	Pupil Voice	AFL	Displays	Surveys	Pupil voice	Planning trawl
Marking and feedback		Google classroom		Learning walks		Projects/ competitions	

Curriculum Overview – Design and Technology

		Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2		
Lower Key Stage 2	Year 3	.	**Stone Age Dwellings –** mixing materials to join and create 3D structures, using natural and man-made materials		**Sewing** Development of fine motor skills, stitching and joining techniques	**Marble runs** Design and building of linked structures, forces at work	**Pizza** Design making bread and pizza	Year 3	Lower Key Stage 2
	Year 4		**Death Masks** Creating 3D masks- functional and aesthetic properties of materials (links to Egyptian topic work).		**Textiles** Creating purses- links to history.	**Kites** Understanding aerodynamics and structures. Exploring material's strength		Year 4	
Upper Key Stage 2	Year 5	**Rockets** exploring forces, building and design to a brief (links to Science and geography)		**Cams** Forces and moving toys. Building using a range of materials including woodwork skills		**Greek Food** – food tasting, cooking and menu design – savoury dishes		Year 5	Upper Key Stage 2
	Year 6	**Shelters** – structures and exploring the nature of materials. Using a broader range of cutting tools. Model-making	**Textiles – Make do and Mend** linked to history WWII topic – recycling clothing and waste fabric. Repurposing or repairing items of clothing			**The Silk Road** Architecture Understanding structures, paper and card model-making. Linked with Geography	**The Silk Road** Development of the use of spices as a result of the trade of the Silk Road	Year 6	

Design and Technology - Progression of knowledge and skills

The national curriculum for design and technology aims to ensure that all pupils:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users
- critique, evaluate and test their ideas and products and the work of others
- understand and apply the principles of nutrition and learn how to cook

This should be achieved through the process of 'Design, Make, Evaluate and Use Technical Knowledge'

Subject and Topic	Focus	Knowledge (essentially the LO)	Skills
Y3 Cave Dwellings	Model –making, exploring materials	Does my model look like the real thing? How can I join these materials?	Design using cross-sectional drawings Use annotations measure, mark out, cut and shape materials and components with some accuracy
Y3 Sewing	Materials, aesthetics and purpose	How can I join these two fabrics? How does this stitch differ from other stitches? Can I make this stronger?	describe the purpose of their products to know that a single fabric shape can be used to make a 3D textiles product
Y3 Marble Runs	3D construction, creating working prototypes	How does this marble run work? How can I join these materials? Does it work using gravity or magnets?	make design decisions that take account of the availability of resources measure, mark out, cut and shape materials and components with some accuracy know how to use learning from science to help design and make products that work
Y3 Pizza	Food technology	How are pizzas made? How does yeast work? How do different cultures use bread to create different food?	follow procedures for safety and hygiene
Y4 Egyptian Masks	Materials, aesthetics and purpose	What is the purpose of this product? How does this material strengthen? What Historical knowledge did I need to make this?	describe the purpose of their products make design decisions that take account of the availability of resources apply a range of finishing techniques, including those from art and design, with some accuracy

Y4 Weaving (purses)	Textiles and sewing	How can I join these two fabrics? Why have I chosen this fabric? How does this stitch differ from other stitches? Can I make this stronger?	generate innovative ideas, drawing on research know what impact products have beyond their intended purpose to know that a single fabric shape can be used to make a 3D textiles product
Y4 Kites	3D construction, materials	Will it fly? What properties does this material have? How can I make my shape stronger and lighter?	generate innovative ideas, drawing on research know how sustainable the materials in products are
Y5 Building Rockets	Design, aerodynamics, propulsion	What is an aerodynamic shape? Will it fly? What will propel this rocket? What do we know about space travel?	make design decisions that take account of the availability of resources develop a simple design specification to guide their thinking produce appropriate lists of tools, equipment and materials that they need know where products were designed and made
Y5 Cams	Mechanisms	What is a Cam? What is a follower? What sort of movement can I create? Does my toy work?	describe the purpose of their products make design decisions that take account of the availability of resources develop a simple design specification to guide their thinking measure, mark out, cut and shape materials and components with some accuracy
Y5 Greek food	Food technology, tasting and menu design	How would I describe this taste? Where does this food come from? What is the nutritional value of this food? How could I combine these foods to make a meal?	generate innovative ideas, drawing on research follow procedures for safety and hygiene know that a recipe can be adapted by adding or substituting one or more ingredients
Y6 Make do and Mend	Textiles and re-purposing	What could we do to fix this? How else could this be used?	describe the purpose of their products

		How can we prevent waste? What would they have done during WW2?	make design decisions that take account of the availability of resources generate innovative ideas, drawing on research produce appropriate lists of tools, equipment and materials that they need know how sustainable the materials in products are know what impact products have beyond their intended purpose
Y6 Shelters	Model-making	How does this model represent the real thing? What shape was an Anderson shelter? How can I create strength through different shapes?	describe the purpose of their products make design decisions that take account of the availability of resources develop a simple design specification to guide their thinking produce appropriate lists of tools, equipment and materials that they need measure, mark out, cut and shape materials and components with some accuracy know how to reinforce and strengthen a 3D framework
Y6 Silk Road Spices	Food technology, research	Where did this spice come from? Where is this used in the world? How can we use this in our own cooking? What are food miles?	Understand how to develop flavour Adding spices to food in harmonious combinations follow procedures for safety and hygiene know that a recipe can be adapted by adding or substituting one or more ingredients know that seasons may affect the food available know that recipes can be adapted to change the appearance, taste, texture and aroma

Design and Technology Vocabulary Ladder

Topic	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Design	user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, function, planning, design criteria, annotated sketch	evaluating, design brief design criteria, innovative, prototype, user, purpose, function, prototype, design criteria, innovative, appealing, design brief, planning, annotated sketch, sensory evaluation	design decisions, functionality, authentic, user, purpose, design specification, design brief, innovative, research, evaluate, design criteria, annotate, evaluate, mock-up, prototype	function, innovative, design specification, design brief, user, purpose design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional, mock-up, prototype
3D construction	cut, fold, join, fix structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, thicker, corner, point, straight, curved, metal, card, plastic circle, triangle, square, rectangle, cuboid, cube, cylinder	Mask, shell, Structure- Material- Plaster Cast, Component, Construction	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, , font, lettering, text, graphics, decision,	shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity, marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating,
Textiles	Fabric, stitch, thread, seam, needle, pin	fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam		stitch, seam allowance seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings,
Food Technology	ingredients, yeast, dough, bran, flour, wholemeal, unleavened, yeast, spice, herbs fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, savoury, seasonality utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape,		name of products, names of equipment, utensils, techniques and ingredients texture, taste, sweet, salty, hot, spicy, appearance, smell, preference, greasy, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet	Names of spices, variety, discussion of flavours including spice descriptions, origins, varied, source, food miles, seasonality, variety
mechanisms	slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, backwards		Cam, follower, mechanism, lever, linkage, pivot, slot, bridge, guide system, input, process, output linear, rotary, oscillating, reciprocating	
Recycling/ Re-purposing (throughout all topics where possible)	Sustainable, recycled, repurposed, re-used, purpose, materials, biodegradable	Sustainable, recycled, repurposed, re-used, purpose, materials, biodegradable	Sustainable, recycled, repurposed, re-used, purpose, materials, biodegradable	Sustainable, recycled, repurposed, re-used, purpose, materials, biodegradable

Endpoints

Design and Technology

Below, At and Above Age Related Statements

Year 3

Below ARE
Developing, planning and communicating ideas • Start to generate ideas by drawing on their own and other people's experiences. • Begin to develop their design ideas through discussion, observation, drawing and modelling. • Identify a purpose for what they intend to design and make. • Understand how to identify a target group for what they intend to design and make based on a design criteria. • Develop their ideas through talk and drawings and label parts. • Make templates and mock ups of their ideas in card and paper or using ICT. **Working with tools, equipment, materials and components to make quality products** • Begin to select tools and materials; use correct vocabulary to name and describe them. • Build structures, exploring how they can be made stronger, stiffer and more stable. • With help measure, cut and score with some accuracy. Learn to use hand tools safely and appropriately. • Start to assemble, join and combine materials in order to make a product. Demonstrate how to cut, shape and join fabric to make a simple product. • Use basic sewing techniques. Start to choose and use appropriate finishing techniques based on own ideas. **Evaluating processes and products** • Evaluate their work against their design criteria. • Look at a range of existing products explain what they like and dislike about products and why. • Start to evaluate their products as they are developed, identifying strengths and possible changes they might make. • With confidence talk about their ideas, saying what they like and dislike about them. **Food and Nutrition** • Understand that all food comes from plants or animals. Know that food has to be farmed, grown elsewhere (e.g. home) or caught. • Understand how to name and sort foods into the five groups in 'The Eat well plate' Know that everyone should eat at least five portions of fruit and vegetables every day. • Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. • Demonstrate how to use techniques such as cutting, peeling and grating.

At ARE
Developing, planning and communicating ideas • With growing confidence generate ideas for an item, considering its purpose and the user/s. • Start to order the main stages of making a product. Identify a purpose and establish criteria for a successful product. • Understand how well products have been designed, made, what material have been used and the construction technique. • Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. • Start to understand whether products can be recycled or reused. • Know to make drawings with labels when designing. • When planning, explain their choice of materials and components including function and aesthetics. **Working with tools, equipment, materials and components to make quality products** • Select a wider range of tools and techniques for making their product safely. • Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. • Start to join and combine materials and components accurately in temporary and permanent ways. • Know how mechanical systems such as cams or pulleys or gears create movement. • Understand how more complex electrical circuits and components can be used to create functional products. • Continue to learn electrical circuits and components can be used to create functional products. • Measure, mark out, cut, score and assemble components with more accuracy. • Start to work safely and accurately with a range of simple tools. • Start to think about their ideas as they make progress and be willing to change things if this helps them to improve their work. • Start to measure, tape or pin, cut and join fabric with some accuracy. **Evaluating processes and products** • Start to evaluate their product against original design criteria e.g. how well it meets its intended purpose • Begin to disassemble and evaluate familiar products and consider the views of others to improve them. • Evaluate the key designs of individuals in design and technology has helped shape the world. **Food and Nutrition** • Start to know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' • Begin to know that to be active and healthy, food and drink are needed to provide energy for the body.

Above ARE
Developing, planning and communicating ideas • Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science. • Confidently make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. Identify the strengths and areas for development in their ideas and products. • When planning consider the views of others, including intended users, to improve their work. • Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground -breaking products. • When planning explain their choice of materials and components according to function and aesthetic. **Working with tools, equipment, materials and components to make quality products** • Select a wider range of tools and techniques for making their product safely. • Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. • Start to join and combine materials and components accurately in temporary and permanent ways. • Know how mechanical systems such as cams or pulleys or gears create movement. • Understand how more complex electrical circuits and components can be used to create functional products. • Continue to learn how to program a computer to monitor changes in the environment and control their products. • Understand how to reinforce and strengthen a 3D framework. Now sew using a range of different stitches, to weave and knit. • Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy. • Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. **Evaluating processes and products** • Evaluate their products carrying out appropriate tests. Start to evaluate their work both during and at the end of the assignment. • Be able to disassemble and evaluate familiar products and consider the views of others to improve them. • Evaluate the key designs of individuals in design and technology has helped shape the world. **Food and Nutrition** • Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' • Know that to be active and healthy, food and drink are needed to provide energy for the body.

Year 4

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Developing, planning and communicating ideas • Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. • Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. • With growing confidence apply a range of finishing techniques, including those from art and design. • Draw up a specification for their design- link with Mathematics and Science. • Use results of investigations, information sources, including ICT when developing design ideas. • With growing confidence select appropriate materials, tools and techniques. • Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. • Understand that mechanical and electrical systems have an input, process and output. • Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product. • Weigh and measure accurately (time, dry ingredients, liquids). • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. **Working with tools, equipment, materials and components to make quality products** • Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately. • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. • Understand how mechanical systems such as cams or pulleys or gears create movement. • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. **Evaluating processes and products** • Start to evaluate a product against the original design specification and by carrying out tests. • Evaluate their work both during and at the end of the assignment. Begin to evaluate it personally and seek evaluation from others. • Evaluate the key designs of individuals in design and technology has helped shape the world. **Food and Nutrition** • Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Begin to understand that seasons may affect the food available. • Understand how food is processed into ingredients that can be eaten or used in cooking. • Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

Year 5

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Developing, planning and communicating ideas • Start to generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. • Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. • With growing confidence apply a range of finishing techniques, including those from art and design. • Draw up a specification for their design- link with Mathematics and Science. • Use results of investigations, information sources, including ICT when developing design ideas. • With growing confidence select appropriate materials, tools and techniques. • Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. • Understand that mechanical and electrical systems have an input, process and output. • Begin to measure and mark out more accurately. Demonstrate how to use skills in using different tools and equipment safely and accurately with growing confidence cut and join with accuracy to ensure a good-quality finish to the product. • Weigh and measure accurately (time, dry ingredients, liquids). • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. **Working with tools, equipment, materials and components to make quality products** • Select appropriate materials, tools and techniques e.g. cutting, shaping, joining and finishing, accurately. • Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities. • Understand how mechanical systems such as cams or pulleys or gears create movement. • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. **Evaluating processes and products** • Start to evaluate a product against the original design specification and by carrying out tests. • Evaluate their work both during and at the end of the assignment. Begin to evaluate it personally and seek evaluation from others. • Evaluate the key designs of individuals in design and technology has helped shape the world. **Food and Nutrition** • Understand that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Begin to understand that seasons may affect the food available. • Understand how food is processed into ingredients that can be eaten or used in cooking. • Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

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Developing, planning and communicating ideas • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. • Accurately apply a range of finishing techniques, including those from art and design. • Draw up a specification for their design- link with Mathematics and Science. Plan the order of their work, choosing appropriate materials, tools and techniques. • Suggest alternative methods of making if the first attempts fail. • Identify the strengths and areas for development in their ideas and products. • Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. **Working with tools, equipment, materials and components to make quality products** • Confidently select appropriate tools, materials, components and techniques and use them. • Use tools safely and accurately. • Assemble components to make working models. • Aim to make and to achieve a quality product. • With confidence pin, sew and stitch materials together to create a product. • Demonstrate when make modifications as they go along. • Construct products using permanent joining techniques. • Understand how mechanical systems such as cams or pulleys or gears create movement. • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. • Know how to reinforce and strengthen a 3D framework. • Understand that mechanical and electrical systems have an input, process and output. • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. **Evaluating processes and products** • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. • Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. • Evaluate against their original criteria and suggest ways that their product could be improved. • Evaluate the key designs of individuals in design and technology has helped shape the world. **Food and Nutrition** • Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. • Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

Year 6

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Developing, planning and communicating ideas • Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. • Apply a range of finishing techniques, including those from art and design. • Draw up a specification for their design- link with Mathematics and Science. • Suggest alternative methods of making if the first attempts fail. • Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. **Working with tools, equipment, materials and components to make quality products** • Select tools, materials, components and techniques and use them. • Use tools safely and accurately. • Assemble components to make working models. • Aim to make and to achieve a quality product. • Pin, sew and stitch materials together to create a product. • Construct products using permanent joining techniques. • Understand how mechanical systems such as cams or pulleys or gears create movement. • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. • Understand that mechanical and electrical systems have an input, process and output. • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. **Evaluating processes and products** • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. • Record their evaluations using drawings with labels. • Evaluate against their original criteria and suggest ways that their product could be improved. **Food and Nutrition** • Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. • Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.

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Developing, planning and communicating ideas • Independently generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces. • Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. • Accurately choose and apply a range of appropriate finishing techniques, including those from art and design. • Draw up a specification for their design- link with Mathematics and Science. Plan the order of their work, choosing appropriate materials, tools and techniques. • Suggest alternative methods of making if the first attempts fail and justify their answers. • Identify the strengths and areas for development in their ideas and products commenting on the work of others. • Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. Create something with a constraint. **Working with tools, equipment, materials and components to make quality products** • Confidently select appropriate tools, materials, components and techniques and use them. • Use tools safely and accurately. • Assemble components to make working models. • Aim to make and to achieve a quality product. • With confidence pin, sew and stitch materials together to create a product. • Demonstrate when to make modifications as they go along. • Construct products using permanent joining techniques. • Understand how mechanical systems such as cams or pulleys or gears create movement. • Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. • Know how to reinforce and strengthen a 3D framework. • Understand that mechanical and electrical systems have an input, process and output. • Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. **Evaluating processes and products** • Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. • Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. • Evaluate against their original criteria and suggest ways that their product could be improved. • Evaluate the key designs of individuals in design and technology has helped shape the world. **Food and Nutrition** • Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world. • Understand that seasons may affect the food available. Understand how food is processed into ingredients that can be eaten or used in cooking. • Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. • Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.