



St Augustine of Canterbury R.C Primary School

Design Technology Curriculum Overview

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Rationale	At St Augustine's, our Design and technology scheme of work (Kapow) aims to inspire pupils to be innovative and creative thinkers who have an appreciation for the product design cycle through ideation, creation, and evaluation. We want pupils to develop the confidence to take risks, through drafting design concepts, modelling, and testing and to be reflective learners who evaluate their work and the work of others. Through our scheme of work, we aim to build an awareness of the impact of design and technology on our lives and encourage pupils to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements.				
Approach	Through Kapow Primary's Design and Technology scheme, pupils respond to design briefs and scenarios that require consideration of the needs of others, developing their skills in the six key areas. Each of our key areas follows the design process (design, make and evaluate) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum. The Kapow Primary scheme is a spiral curriculum, with key areas revisited again and again with increasing complexity, allowing pupils to revisit and build on their previous learning. We have condensed the curriculum due to our nature as a Catholic School and the demand this has on our teaching time. We have prioritised Cooking and Nutrition in every year group as we believe that this is of vital importance in the lives of our children and families. We have then ensure a broad balance of Textiles, Electrical Systems, Structures and Digital World across each key stage.				
SEND	Children who are identified as working below ARE may have specific needs which contribute to their difficulty in this area. Where needs are specifically related to a Special Educational Need or Disability, specific and targeted support is outlined and reviewed through the child's EHCP and/ or Pupil Overview of Provision (POP). We recognize that children who have a SEND in other areas may excel in more creative subjects such as Design Technology. Lessons incorporate a range of teaching strategies from independent tasks, paired and group work including practical hands-on, computer-based and inventive tasks. This variety means that lessons are engaging and appeal to those with a variety of learning styles. Guidance for adaptive teaching is available for every lesson to ensure that lessons can be accessed by all pupils and opportunities to stretch pupils' learning are available when required. We will ensure all children can engage in DT lessons and will provide support where necessary, whether this be through a supporting adult or group or peer support. More detail can be found on Medium Term Plans as written by class teachers for each unit.				
Prior Learning and Assessment	Please recap on the previous year's group learning before embarking on the current topic. Each unit of work will start and end with a check in/check out task. Quizzes may also be used on Kapow. In Design Technology, we expect that informal, formative assessment is carried out in each lesson and then formally assessed at the end of each unit. In the Kapow scheme, there are unit quizzes at the end of each teaching sequence which can also be used for summative assessment. We also expect a photograph of a child's finished product to be displayed in their books with a comprehensive evaluation of their product by the child.				
School Values	Compassion	Hardworking	Respect	Inviting	Sharing
	Teamwork				

DT Golden Threads	Structures	Mechanisms	Cooking and Nutrition	Textiles	Electrical and Digital World
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EYFS	Structures – Junk Modelling	Textiles – Bookmarks	Structures - Boats
	Our curriculum documents for EYFS are planned and sequenced in line with Development Matters and the National Curriculum subjects. Although Kapow does have EYFS units, we encourage these to be used at the discretion of the EYFS staff in line with their planning and the children's interests.		
EYFS Outcomes	<p>Physical development</p> <ul style="list-style-type: none"> Develop small motor skills so that they can use a range of tools competently, safely and confidently. ELG: Fine Motor Skills: Use a range of small tools, including scissors, paint brushes and cutlery. <p>Expressive arts and design</p> <ul style="list-style-type: none"> Explore, use and refine a variety of artistic effects to express ideas and feelings. ELG: Creating with Materials: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. <p>Communication and Language</p> <ul style="list-style-type: none"> Articulate their ideas and thoughts in well-formed sentences. Connect one idea or action to another using a range of connectives. Use talk to help work out problems and organise thinking and activities, and to explain how things work and why they might happen. ELG: Speaking: Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary ELG: Speaking: Offer explanations for why things might happen. <p>Understanding the World</p> <ul style="list-style-type: none"> Explore the natural world around them. ELG: The Natural World: Explore the natural world around them, making observations and drawing pictures of animals and plants <p>Characteristics of effective learning</p> <ul style="list-style-type: none"> Playing and exploring. Active learning Critical Thinking 		
Lesson Sequence	<ol style="list-style-type: none"> Explore and investigate tools found in the junk modelling area Investigate cutting materials Plan and select resources to make a model Verbally plan and create and junk model Share and talk about a finished model Explore different ways to temporarily join materials 	<ol style="list-style-type: none"> Develop threading and weaving skills Apply weaving skills to paper Practice and apply threading with hessian and wool Use threading and sewing to design a bookmark Create a bookmark following own design Evaluate their own product. 	<ol style="list-style-type: none"> Understand what waterproof means and test whether things are waterproof Test and predict as to what materials float or sink Compare use of boats Design a boat Create a boat
Readiness for KSI	<ul style="list-style-type: none"> To build / construct structures from a range of materials to a design brief that they have created or been given. To build / construct structures that are tall or strong. To know that tape and glue can join materials together and can make structures stronger. 	<ul style="list-style-type: none"> To describe something they want to make To say who they are making for To talk about what materials they are going to use when making To join materials together when making To talk about their products, and what they are pleased with To talk about their constructions and say how it could be even better To talk about everyday objects that they like and say why they are good 	<ul style="list-style-type: none"> To build / construct structures from a range of materials to a design brief that they have created or been given. To build / construct structures that are tall or strong. To know that tape and glue can join materials together and can make structures stronger.

Key Stage 1

Year 1	Cooking and Nutrition: Fruit and Vegetables <i>Can you make a smoothie?</i>	Structures: Constructing Windmills <i>Can you construct a windmill?</i>	Textiles: Puppets <i>Can you make a puppet?</i>	Mechanisms: Moving Story Book <i>Can you make a moving story book?</i>
National Curriculum	<p>Design</p> <ul style="list-style-type: none"> - Design purposeful, functional, appealing products for themselves and other users based on design criteria - Generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> - Select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] - Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> - Explore and evaluate a range of existing products - Evaluate their ideas and products against design criteria 			
	<p>Cooking and Nutrition</p> <ul style="list-style-type: none"> • Understand where food comes from. 	<p>Technical knowledge</p> <ul style="list-style-type: none"> • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. 		<p>Technical knowledge</p> <ul style="list-style-type: none"> • Build structures, exploring how they can be made stronger, stiffer and more stable • Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Key Knowledge	<ul style="list-style-type: none"> • That a blender is a machine which mixes ingredients together into a smooth liquid. • That a fruit has seeds and a vegetable does not. • That fruits grow on trees or vines. • That vegetables can grow either above or below ground. • That vegetables are any edible part of a plant. 	<ul style="list-style-type: none"> • That the sails or blades of a windmill are moved by the wind. • That windmills are used to generate power and were used for grinding flour. • That a structure is something built for a reason. • That stable structures do not topple. • That adding weight to the base of a structure can make it more stable. 	<ul style="list-style-type: none"> • To know that 'joining technique' means connecting two pieces of material together. • To know that there are various temporary methods of joining fabric by using staples, glue or pins. • To understand that different techniques for joining materials can be used for different purposes. • To understand that a template (or fabric pattern) is used to cut out the same shape multiple times. • To know that drawing a design idea is useful to see how an idea will look. 	<ul style="list-style-type: none"> • To know that a mechanism is the parts of an object that move together. • To know that a slider mechanism moves an object from side to side. • To know that a slider mechanism has a slider, slots, guides and an object. • To know that bridges and guides are bits of card that purposefully restrict the movement of the slider.

Key Skills	<ul style="list-style-type: none"> • Designing smoothie carton packaging by hand. • Chopping fruit and vegetables safely to make a smoothie. • Juicing fruits to make a smoothie. • Identifying if a food is a fruit. • Learning where and how fruits and vegetables grow. • Tasting and evaluating different foods. • Describing appearance, smell and taste. • Suggesting information to be included on packaging 	<ul style="list-style-type: none"> • Finding the middle of an object. • Puncturing holes. • Adding weight to a structure. • Creating supporting structures. • Cutting evenly and carefully. • Evaluating and improving a product. 	<ul style="list-style-type: none"> • Using a template to create a design for a puppet. • Cutting fabric neatly with scissors. • Using joining methods to decorate a puppet. • Sequencing steps for construction. • Reflecting on a finished product, explaining likes and dislikes. 	<ul style="list-style-type: none"> • Explaining how to adapt mechanisms, using bridges or guides to control the movement. • Designing a moving story book for a given audience. • Following a design to create moving models that use levers and sliders. • Testing a finished product, seeing whether it moves as planned and if not, explaining why and how it can be fixed. • Reviewing the success of a product by testing it with its intended audience.
Lesson Sequence	<ol style="list-style-type: none"> 1. Identify if a food is a fruit or a vegetable. 2. Identify where plants grow and which part we eat. 3. Taste and compare fruit and vegetables 4. Make a fruit and vegetable smoothie 	<ol style="list-style-type: none"> 1. Make a stable structure 2. Use tools and equipment safely to create part of a structure 3. To join components of my structure. 4. Evaluate my project. 	<ol style="list-style-type: none"> 1. Join fabrics using different methods 2. Use a template to create a design 3. Join two fabrics together accurately 4. Embellish my design using joining methods. 	<ol style="list-style-type: none"> 1. Explore making mechanisms (sliders) 2. To design a moving storybook 3. To construct a moving picture 4. To evaluate my finished product.
Curriculum Enhancements	DT activities should also be planned throughout the curriculum, for example in History, where children can practice the skills they have learnt in DT.			

Year 2	Mechanisms: Fairground Wheel Can you construct a fairground wheel?	Cooking and Nutrition: A Balanced Diet – Wraps Can you construct a healthy wrap?	Structures: Baby Bear's Chair Can you make a chair for baby bear?	Textiles: Pouches Can you design and make pouch?
National Curriculum	<p>Design</p> <ul style="list-style-type: none"> design purposeful, functional, appealing products for themselves and other users based on design criteria generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology <p>Make</p> <ul style="list-style-type: none"> select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing] Select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics <p>Evaluate</p> <ul style="list-style-type: none"> explore and evaluate a range of existing products evaluate their ideas and products against design criteria 			
	Technical knowledge <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products 	Cooking and Nutrition <ul style="list-style-type: none"> use the basic principles of a healthy and varied diet to prepare dishes understand where food comes from. 	Technical knowledge <ul style="list-style-type: none"> build structures, exploring how they can be made stronger, stiffer and more stable 	
Key Knowledge	<ul style="list-style-type: none"> To know that different materials have different properties and are therefore suitable for different uses. To know the features of a Ferris wheel include the wheel, frame, pods, a base, an axle and an axle holder. To know that it is important to test my design as I go along so that I can solve any problems that may occur. 	<ul style="list-style-type: none"> That 'diet' means the food and drink that a person or animal usually eats. What makes a balanced diet. That the five main food groups are: carbohydrates, fruits and vegetables, protein, dairy and oils and spreads. That I should eat a range of different foods from each food group, and roughly how much of each food group. That 'ingredients' means the items in a mixture or recipe. How to cut, grate, snip and spread to prepare foods. How to review and give a score to evaluate. 	<ul style="list-style-type: none"> To know that shapes and structures with wide, flat bases or legs are the most stable. To understand that the shape of a structure affects its strength. To know that materials can be manipulated to improve strength and stiffness. To know that a structure is something which has been formed or made from parts. To know that a 'stable' structure is one which is firmly fixed and unlikely to change or move. To know that a 'strong' structure is one which does not break easily. To know that a 'stiff' structure or material is one which does not bend easily. 	<ul style="list-style-type: none"> To know that sewing is a method of joining fabric. To know that different stitches can be used when sewing. To understand the importance of tying a knot after sewing the final stitch. To know that a thimble can be used to protect my fingers when sewing.

Key Skills	<ul style="list-style-type: none"> Selecting a suitable linkage system to produce the desired motions. Designing a wheel. Selecting appropriate materials based on their properties. Selecting materials according to their characteristics. Following a design brief. Evaluating different designs. Testing and adapting a design. 	<ul style="list-style-type: none"> Chopping foods safely to make a wrap. Grating foods to make a wrap. Snipping smaller foods instead of cutting. Spreading soft foods to make a wrap. Identifying the five food groups. Learning about a balanced diet. Tasting and evaluating different food combinations. Describing appearance, smell and taste. Designing three wrap ideas. 	<ul style="list-style-type: none"> Generating and communicating ideas using sketching and modelling. Learning about different types of structures, found in the natural world and in everyday objects. Making a structure according to design criteria. Creating joints and structures from paper/card and tape. Building a strong and stiff structure by folding paper. Comparing the stability of different shapes. Testing the strength of their own structures and identifying the weakest part of a structure. Evaluating the strength, stiffness and stability of their own structure. 	<ul style="list-style-type: none"> Designing a pouch. Selecting and cutting fabrics for sewing. Decorating a pouch using fabric glue or running stitch. Threading a needle. Sewing running stitch, with evenly spaced, neat, even stitches to join fabric. Neatly pinning and cutting fabric using a template. Troubleshooting scenarios posed by teacher. Evaluating the quality of the stitching on others' work. Discussing as a class, the success of their stitching against the success criteria. Identifying aspects of their peers' work that they particularly like and why.
Lesson Sequence	<ol style="list-style-type: none"> Explore wheel mechanisms and design a fairground wheel Select appropriate materials to build Build and test a moving wheel Make and evaluate a structure with a moving wheel. 	<ol style="list-style-type: none"> To know what makes a balanced diet To taste test food combinations To design a healthy wrap To make a healthy wrap 	<ol style="list-style-type: none"> Explore the concept and features of structures To understand that the shape of the structure supports strength To make a structure according to design criteria To produce a finished structure and evaluate it's strength, stiffness and stability. 	<ol style="list-style-type: none"> To sew a running stitch To sew a running stitch using a template Join fabrics using a running stitch to create a pouch Decorate the pouch using running stitch and fabric glue.
Curriculum Enhancements	DT activities should also be planned throughout the curriculum, for example in History, where children can practice the skills they have learnt in DT.			

Year 3	Structures: Constructing a Castle <i>Can you make a castle out of paper?</i>	Mechanical Systems: Pneumatic Toys <i>Can you design and make pneumatic toy?</i>	Cooking and Nutrition: Eating Seasonally <i>Do I understand the concept of eating seasonally?</i>	Textiles: Egyptian Collars <i>Can I design and make an Egyptian collar?</i>
National Curriculum	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, 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 <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world 			
	<p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work <p>Technical Knowledge</p> <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	<p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work understand how key events and individuals in design and technology have helped shape the world <p>Technical Knowledge</p> <ul style="list-style-type: none"> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 	<p>Cooking and Nutrition</p> <ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed 	<p>Evaluate</p> <ul style="list-style-type: none"> evaluate their ideas and products against their own design criteria and consider the views of others to improve their work

Key Knowledge	<ul style="list-style-type: none"> To understand that wide and flat based objects are more stable. To understand the importance of strength and stiffness in structures. To know the following features of a castle: flags, towers, battlements, turrets, curtain walls, moat, drawbridge and gatehouse – and their purpose. To know that a façade is the front of a structure. 	<ul style="list-style-type: none"> To understand how pneumatic systems work. To understand that pneumatic systems can be used as part of a mechanism. To know that pneumatic systems operate by drawing in, releasing and compressing air. 	<ul style="list-style-type: none"> That seasonal means foods that grow in a given season in a given country. Some foods that grow in the UK and what season they grow in. That eating seasonal foods can have a positive impact on the environment. How to describe the flavour and texture of foods. How to cut and peel safely. That the appearance of food is as important as taste. That similar coloured fruits and vegetables often have similar nutritional benefits. 	<ul style="list-style-type: none"> To know that appliqué is a way of mending or decorating a textile by applying smaller pieces of fabric. To understand that a product's function relies on material choices. To identify and explain some materials and explain their aesthetic and/or functional properties.
Key Skills	<ul style="list-style-type: none"> Designing a castle with key features to appeal to a specific person/purpose. Drawing and labelling a castle design using 2D shapes. Designing and/or decorating a castle tower on CAD software. Constructing a range of 3D geometric shapes using nets. Creating special features for individual designs. Making facades from a range of recycled materials. Evaluating own work and the work of others based on the aesthetic of the finished product and in comparison to the original design. Suggesting points for modification of the individual designs. 	<ul style="list-style-type: none"> Designing a toy that uses a pneumatic system. Developing criteria from a brief. Generating ideas using thumbnail sketches and exploded diagrams Learning that different types of drawings are used in design to explain ideas clearly. Creating a pneumatic system to create a desired motion. Building secure housing for a pneumatic system. Using syringes and balloons to create different types of pneumatic systems to make a functional and appealing pneumatic toy. Selecting materials due to their functional and aesthetic characteristics. Manipulating materials to create different effects by cutting, creasing, folding and weaving. Testing and modifying the outcome, suggesting improvements. Understanding the purpose of exploded-diagrams through the eyes of a designer and their client. 	<ul style="list-style-type: none"> Describing how climate affects where foods grow. Identifying seasonal ingredients from the UK. Tasting seasonal ingredients Describing the texture and flavour of ingredients. Peeling foods by hand or with a peeler. Cutting ingredients safely Choosing ingredients based on a design brief. Following the instructions within a recipe. Describing the benefits of seasonal fruits and vegetables and their impact on the environment. 	<ul style="list-style-type: none"> Designing and making a template for an Egyptian collar and applying individual design criteria. Following their design criteria to create an Egyptian collar. Selecting and cutting fabrics with ease using fabric scissors. Threading needles with greater independence. Tying knots with greater independence. Sewing cross stitch to decorate or join fabric. Decorating fabric using appliqué, beads (or other embellishments), ribbon and pinking scissors. Evaluating an end product.

Lesson Sequence	<ol style="list-style-type: none"> 1. To recognise how 2D and 3D shapes can make a stable structure 2. To design a castle 3. Construct 3D nets 4. Construct and evaluate a final product 	<ol style="list-style-type: none"> 1. To understand how pneumatic systems work 2. To design a toy that uses a pneumatic system 3. To create a pneumatic system 4. To test and finalise ideas against design criteria 	<ol style="list-style-type: none"> 1. Know that climate affects food and growth 2. To understand the advantages of eating seasonal foods grown in the UK 3. To create a recipe that is healthy and nutritious using seasonal vegetables 4. To safely follow a recipe when cooking 	<ol style="list-style-type: none"> 1. To sew cross stitch using applique 2. Develop and use a template 3. To assemble fabric parts into a product 4. To decorate using applique and cross stitch
Curriculum Enhancements	DT activities should also be planned throughout the curriculum, for example in History, where children can practice the skills they have learnt in DT.			

Year 4	Mechanical Systems: Slingshot Car <i>Can I design and make a car that moves?</i>	Textiles: Fastenings (Book Sleeves) <i>What is a fastening and what is its job?</i>	Cooking and Nutrition: Adapting a Recipe – Biscuits <i>Why are budgets important when baking?</i>	Electrical Systems: Torches <i>Can I design and make a torch that lights up?</i>
National Curriculum	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, 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 <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 			
	<p>Evaluate</p> <ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world <p>Technical Knowledge</p> <ul style="list-style-type: none"> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] 		<p>Cooking and Nutrition</p> <ul style="list-style-type: none"> prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques 	<p>Evaluate</p> <ul style="list-style-type: none"> understand how key events and individuals in design and technology have helped shape the world <p>Technical knowledge</p> <ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
Key Knowledge	<ul style="list-style-type: none"> To understand that all moving things have kinetic energy. To understand that kinetic energy is the energy that something (object/person) has by being in motion. To know that air resistance is the level of drag on an object as it is forced through the air. To understand that the shape of a moving object will affect how it moves due to air resistance. 	<ul style="list-style-type: none"> To know that a fastening is something that holds two pieces of material together. To know that different fastening types are useful for different purposes. To know that creating a mock-up (prototype) of their design is useful for checking ideas and proportions. 	<ul style="list-style-type: none"> That the amount of an ingredient in a recipe is known as the 'quantity'. That safety and hygiene are important when cooking. The following cooking techniques: sieving, measuring, mixing/stirring, cutting out and shaping. The importance of budgeting while planning ingredients for a recipe. That products often have a target audience. 	<ul style="list-style-type: none"> To understand that conductors are materials which electricity can pass through. To understand that insulators are materials which electricity cannot pass through. To know that a battery contains stored electricity To know that an electrical circuit must be complete for electricity to flow. To know that a switch can be used to complete and break an electrical circuit.

Key Skills	<ul style="list-style-type: none"> • Designing a shape that reduces air resistance. • Drawing a net to create a structure from. • Choosing shapes that increase or decrease speed as a result of air resistance. • Personalising a design. • Measuring, marking, cutting and assembling with increasing accuracy. • Making a model based on a chosen design. • Evaluating the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance. 	<ul style="list-style-type: none"> • Writing design criteria for a product, articulating decisions made. • Designing a personalised book sleeve. • Making and testing a paper template with accuracy and in keeping with the design criteria. • Measuring, marking and cutting fabric using a paper template. • Selecting a stitch style to join fabric. • Sewing neatly using small regular stitches. • Incorporating a fastening to a design. • Testing and evaluating an end product against the original design criteria. 	<ul style="list-style-type: none"> • Designing a biscuit within a given budget, drawing upon previous taste testing. • Following a baking recipe. • Cooking safely, following basic hygiene rules. • Adapting a recipe. • Evaluating a recipe, considering: taste, smell, texture and appearance. • Describing the impact of the budget on the selection of ingredients. • Evaluating and comparing a range of products. • Suggesting modifications. 	<ul style="list-style-type: none"> • Designing a torch, giving consideration to the target audience and creating both design and success criteria focusing on features of individual design ideas. • Making a torch with a working electrical circuit and switch. • Using appropriate equipment to cut and attach materials. • Assembling a torch according to the design and success criteria. • Evaluating electrical products. • Testing and evaluating the success of a final product.
Lesson Sequence	<ol style="list-style-type: none"> 1. Build a car chassis 2. To design a shape that reduces air resistance 3. To make a model based on a chosen design 4. To assemble and test a product. 	<ol style="list-style-type: none"> 1. Identify and evaluate different fastenings 2. Design a product to meet design criteria 3. To make and test a paper template 4. Assemble a book jacket 	<ol style="list-style-type: none"> 1. To evaluate existing biscuit products 2. To prepare and cook a dish 3. To select ingredients following a Budget 4. To take inspiration from packaging 5. To make an test a prototype biscuit 6. To evaluate a product 	<ol style="list-style-type: none"> 1. Learn about electrical items and how they work 2.To analyse and evaluate electrical items 3. To design a product to fit a set of specific user needs. 4. To make an evaluate a torch
Curriculum Enhancements	DT activities should also be planned throughout the curriculum, for example in History, where children can practice the skills they have learnt in DT.			

Year 5	Cooking and Nutrition: What Could be Healthier? <i>Where does our food come from?</i>	Textiles: Stuffed Toys (Also can be an Easter unit) <i>How is a teddy made?</i>	Structures: Bridges <i>Can I design and build a bridge?</i>	Mechanical Systems: Pop Up Book <i>How do books become 3D?</i>
National Curriculum	<p>Design</p> <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design <p>Make</p> <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, 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 <p>Evaluate</p> <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 			
	<p>Cooking and Nutrition</p> <ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed 		<p>Technical Knowledge</p> <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	<p>Technical Knowledge</p> <ul style="list-style-type: none"> understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]
Key Knowledge	<ul style="list-style-type: none"> That beef comes from cows reared on farms. That recipes can be adapted to suit nutritional needs and dietary requirements. That nutritional information is found on food packaging. That coloured chopping boards can prevent cross-contamination. That food packaging serves many purposes. 	<ul style="list-style-type: none"> To know that blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric. To understand that it is easier to finish simpler designs to a high standard. To know that soft toys are often made by creating appendages separately and then attaching them to the main body. To know that small, neat stitches which are pulled taut are important to ensure that the soft toy is strong and holds the stuffing securely. 	<ul style="list-style-type: none"> To understand some different ways to reinforce structures. To understand how triangles can be used to reinforce bridges. To know that properties are words that describe the form and function of materials. To understand why material selection is important based on their properties. To understand the material (functional and aesthetic) properties of wood. 	<ul style="list-style-type: none"> To know that mechanisms control movement. To understand that mechanisms can be used to change one kind of motion into another. To understand how to use sliders, pivots and folds to create paper-based mechanisms. To know that a design brief is a description of what I am going to design and make. To know that designers often want to hide mechanisms to make a product more aesthetically pleasing.

Key Skills	<ul style="list-style-type: none"> Explaining the farm-to-fork process. Researching existing recipes. Suggesting alternative ingredients. Analysing nutritional content Writing an alternative recipe. Understanding cross-contamination. Using preparation skills. Designing a jar label. Making a developed recipe. 	<ul style="list-style-type: none"> Designing a stuffed toy considering the main component shapes required and creating an appropriate template. Considering the proportions of individual components. Creating a 3D stuffed toy from a 2D design. Measuring, marking and cutting fabric accurately and independently. Creating strong and secure blanket stitches when joining fabric. Threading needles independently. Using appliqué to attach pieces of fabric decoration. Sewing blanket stitch to join fabric. Applying blanket stitch so the spaces between the stitches are even and regular. Testing and evaluating an end product and giving points for further improvements. 	<ul style="list-style-type: none"> Designing a stable structure that is able to support weight. Creating a frame structure with focus on triangulation. Making a range of different shaped beam bridges. Using triangles to create truss bridges that span a given distance and support a load. Building a wooden bridge structure. Independently measuring and marking wood accurately. Selecting appropriate tools and equipment for particular tasks. Using the correct techniques to saw safely. Identifying where a structure needs reinforcement and using card corners for support. Explaining why selecting appropriate materials is an important part of the design process. Understanding basic wood functional properties. Adapting and improving own bridge structure by identifying points of weakness and reinforcing them as necessary. Suggesting points for improvements for own bridges and those designed by others. 	<ul style="list-style-type: none"> Designing a pop-up book which uses a mixture of structures and mechanisms. Naming each mechanism, input and output accurately. Storyboarding ideas for a book. Following a design brief to make a pop up book, neatly and with focus on accuracy. Making mechanisms and/or structures using sliders, pivots and folds to produce movement. Using layers and spacers to hide the workings of mechanical parts for an aesthetically pleasing result. Evaluating the work of others and receiving feedback on own work. Suggesting points for improvement.
Lesson Sequence	<ol style="list-style-type: none"> Understand how ingredients are reared and processed To make adaptations to design a recipe To evaluate nutritional content To practice food preparation skills To design a product label To evaluate and make an adapted recipe. 	<ol style="list-style-type: none"> Design a stuffed toy Learn to blanket stitch To create and add decorations to fabric To use a blanket stitch to assemble the components of a stuffed toy 	<ol style="list-style-type: none"> To explore how to reinforce a beam (structure) to improve its strength To build a spaghetti truss bridge To build a wooden truss bridge Build a wooden truss bridge Evaluate my wooden truss bridge 	<ol style="list-style-type: none"> To design a pop up book Follow my design brief to make a pop up book Use layers and spacers to cover the working of mechanisms To create a high quality product suitable for a user
Curriculum Enhancements	DT activities should also be planned throughout the curriculum, for example in History, where children can practice the skills they have learnt in DT.			

Year 6	Structure: Playgrounds <i>What is a prototype and can I create one?</i>	Electrical Systems: Steady Hand Game	Mechanical Systems: Automata <i>What is an automata and can I make one?</i>	Cooking and Nutrition: Come Dine With Me <i>Can I design, make and evaluate a three course meal?</i>
National Curriculum	Design <ul style="list-style-type: none"> use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design 			
	Make <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, 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 Evaluate <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Technical Knowledge <ul style="list-style-type: none"> apply their understanding of how to strengthen, stiffen and reinforce more complex structures 	Make <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, 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 Technical Knowledge <ul style="list-style-type: none"> understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] 	Make <ul style="list-style-type: none"> 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 Evaluate <ul style="list-style-type: none"> investigate and analyse a range of existing products evaluate their ideas and products against their own design criteria and consider the views of others to improve their work 	Make <ul style="list-style-type: none"> select from and use a wider range of tools and equipment to perform practical tasks [for example, 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 Evaluate <ul style="list-style-type: none"> evaluate their ideas and products against their own design criteria and consider the views of others to improve their work Cooking and Nutrition <ul style="list-style-type: none"> understand and apply the principles of a healthy and varied diet prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.

Key Knowledge	<ul style="list-style-type: none"> To know that structures can be strengthened by manipulating materials and shapes. To understand what a 'footprint plan' is. To understand that in the real world, design can impact users in positive and negative ways. To know that a prototype is a cheap model to test a design idea. 	<ul style="list-style-type: none"> To know that 'form' means the shape and appearance of an object. To know the difference between 'form' and 'function'. To understand that 'fit for purpose' means that a product works how it should and is easy to use. To know that 'form over purpose' means that a product looks good but does not work very well. To know the importance of 'form follows function' when designing: the product must be designed primarily with the function in mind. To understand the diagram perspectives 'top view', 'side view' and 'back'. 	<ul style="list-style-type: none"> To understand that the mechanism in an automata uses a system of cams, axles and followers. To understand that different shaped cams produce different outputs. To know that an automata is a hand-powered mechanical toy. To know that a cross-sectional diagram shows the inner workings of a product. 	<ul style="list-style-type: none"> That 'flavour' is how a food or drink tastes. That many countries have 'national dishes' which are recipes associated with that country. That 'processed food' means food that has been put through multiple changes in a factory. That it is important to wash fruit and vegetables before eating to remove any dirt and insecticides. What happens to a certain food before it appears on the supermarket shelf (farm to fork).
Key Skills	<ul style="list-style-type: none"> Designing a playground featuring a variety of different structures, giving consideration to how the structures will be used. Considering effective and ineffective designs. Building a range of play apparatus structures drawing upon new and prior knowledge of structures. Measuring, marking and cutting wood to create a range of structures. Using a range of materials to reinforce and add decoration to structures. Improving a design plan based on peer evaluation. Testing and adapting a design to improve it as it is developed. Identifying what makes a successful structure. 	<ul style="list-style-type: none"> Designing a steady hand game, identifying and naming the components required Drawing a design from three different perspectives. Generating ideas through sketching and discussion. Modelling ideas through prototypes. Understanding the purpose of products (toys), including what is meant by 'fit for purpose' and 'form over function'. Constructing a stable base for a game. Accurately cutting, folding and assembling a net. Decorating the base of the game to a high-quality finish Making and testing a circuit. Incorporating a circuit into a base. Testing their own and others' finished games, identifying what went well and making suggestions for improvement 	<ul style="list-style-type: none"> Experimenting with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. Understanding how linkages change the direction of a force. Making things move at the same time. Understanding and drawing cross-sectional diagrams to show the inner-workings of my design. Measuring, marking and checking the accuracy of the jelutong and dowel pieces required. Measuring, marking and cutting components accurately using a ruler and scissors. Assembling components accurately to make a stable frame. Understanding that for the frame to function effectively the components must be cut 	<ul style="list-style-type: none"> Writing a recipe, explaining the key steps, method and ingredients. Including facts and drawings from research undertaken. Following a recipe, including using the correct quantities of each ingredient. Adapting a recipe based on research. Working to a given timescale. Working safely and hygienically with independence. Evaluating a recipe, considering: taste, smell, texture and origin of the food group. Taste testing and scoring final products. Suggesting and writing up points of improvements in productions.

		<ul style="list-style-type: none"> Gathering images and information about existing children's toys. Analysing a selection of existing children's toys. 	<p>accurately and the joints of the frame secured at right angles.</p> <ul style="list-style-type: none"> Selecting appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set. Evaluating the work of others and receiving feedback on own work. Applying points of improvement to their toys Describing changes they would make/do if they were to do the project again. 	<ul style="list-style-type: none"> Evaluating health and safety in production to minimise cross contamination.
Lesson Sequence	<ol style="list-style-type: none"> Design playground with a variety of structures Build a range of structures To improve and add detail to structures To create the surrounding landscape 	<ol style="list-style-type: none"> To research and analyse children's toys To design a steady hand game To construct a stable base To assemble electronics and complete an electronic game 	<ol style="list-style-type: none"> To prepare wood for assembly by measuring, marking and cutting each piece To assemble the automata frame components and supports with the help of an exploded-diagram To explore the relationship between cam profiles and follower movement, to inform a design decision To apply the housing and finishing touches to the automata frame 	<ol style="list-style-type: none"> To research and design a three-course meal To explain recipe choices Starter: To apply culinary skills and knowledge Main: To apply culinary skills and knowledge Dessert: To apply culinary skills and knowledge
Curriculum Enhancements	DT activities should also be planned throughout the curriculum, for example in History, where children can practice the skills they have learnt in DT.			