



# Hillbourne Primary School

## DT Progression of Knowledge



### Intent

We want children leaving Hillbourne Primary school to be able to:

- Know what food groups and quantities comprise a healthy, balanced diet
- Be able to demonstrate their knowledge of a variety of structures, electrical systems and mechanisms
- Understand and create a variety of textiles products
- Appreciate and evaluate their own creations and the work of others

### Implementation

The teaching and implementation of the Design and Technology Curriculum at Hillbourne Primary School is based on the National Curriculum in KS1 and KS2 and Development Matters in EYFS to ensure a well-structured approach to this creative subject. The Design and Technology curriculum is structured into 5 main strands as derived from the National Curriculum; Mechanical Systems, Structures, Textiles, Cooking and Nutrition and Electrical Systems

The teaching of Design and Technology, involves teaching skills and concepts in an inclusive, inspiring, engaging and relevant way. Design and Technology is a rigorous and practical subject. Using creativity and imagination, our pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Learning about how to fix things, build things, create and problem-solve are vital, and encompass some of the main skills that we want children to have when they leave our school. While there are opportunities for pupils of all abilities to develop their skills and knowledge in each teaching unit, the planned progression built into the Design and Technology curriculum means that the pupils are increasingly challenged as they move through the school.

Design and Technology is an enjoyable practical learning experience and pupils learn how to manage risks sensibly and within the remit of risk assessments. Pupils undertake a termly Design and Technology project at least three times a year. Designers and architects from different periods of time are studied and the children work through the iterative process of design, make and evaluate within every unit. The Design and Technology curriculum will make a profound and positive impact on the outcomes of every pupil. The structure enables us to return to core knowledge and skills throughout the course, embedding key practises and understanding. Core knowledge of each unit is supported by the progression of skills which details the key vocabulary and key questions.

### Key Threads

At Hillbourne Primary, we have key threads that run through and across year groups. These will continually be revisited and explored across the academic journey of a child at Hillbourne. Each thread is underpinned by key vocabulary and knowledge that will be explicitly taught in Design and Technology. The key threads are:

Research	Skill development	Evaluation and Analysis	Opportunities for creative work	Opportunities to plan towards a product	Exposure to and use of multi-media	Great artists and designers	Clarity of purpose
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## Safety

Throughout our whole curriculum, but especially Design and Technology, we embed safety knowledge and learning to ensure our children understand how to keep themselves and others safe. Where applicable, safety is explicitly taught within context (e.g. knife safety when cooking, electrical safety when making circuits) in order for our children to fully understand how to keep themselves both during the in-class activities as well as in the future.

## Curriculum Organisation

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Foundation</b>	<i>Knowledge and skills taught and recapped throughout the year</i>					
<b>Year 1</b>		Textiles		Mechanical Systems		Structures
<b>Year 2</b>		Cooking and Nutrition		Mechanical Systems		Textiles
<b>Year 3</b>		Textiles		Mechanical Systems		Cooking and Nutrition
<b>Year 4</b>		Structures		Cooking and Nutrition		Electrical Systems
<b>Year 5</b>		Cooking and Nutrition		Structures		Textiles
<b>Year 6</b>		Mechanical Systems		Structures		Electrical Systems

*N.B. Curriculum links are made where there are clear overlaps within content and context. However, teachers ensure that strenuous links are not made and that where links are made, the design and technology knowledge is at the forefront of what is taught. This means some of the units are taught discretely. This ensures the understanding that children gain is the knowledge and is not the outcome or context in which it is taught.*

## Curriculum Overview

	Mechanical Systems	Structures	Textiles	Cooking and Nutrition	Electrical Systems
<b>Foundation</b>	<i>Knowledge and skills taught and recapped throughout the year</i>				
<b>Year 1</b>	<p><b>Context:</b> Sliding Images <i>Children will make sliders by using levers and pivots, thinking carefully about how to cut and join the materials together in their final explorer themed image</i></p> <p><b>Related Designer:</b> Jan Pienkowski (Moveable books)</p>	<p><b>Context:</b> UK Monuments <i>Using UK structures as inspiration, the children explore how to make structures strong, stiff and stable. They use card and paper, modelling and joining these, to create their own structures</i></p> <p><b>Related Designer:</b> Norman Foster (The Gherkin)</p>	<p><b>Context:</b> Hand Puppets <i>Children discover running stitch and how we can use templates to create hand puppets. They use different joining techniques to add decorative features to their puppets</i></p> <p><b>Related Designer:</b> Jim Henson (The Muppets)</p>		
<b>Year 2</b>	<p><b>Context:</b> Fire Engines <i>Children will look at how wheels and axles are used in a variety of products. They then look at these regarding fire engines, designing a chassis and body and cutting dowel to create the axle</i></p> <p><b>Related Designer:</b> Frank Hornby (Hornby model trains, Dinky model cars and Meccano model kits)</p>		<p><b>Context:</b> Flags <i>Children use templates and back stitch to create flags. They add decorative features using stitching, thinking about the importance of neat and accurate stitching as a way to improve strength</i></p> <p><b>Related Designer:</b> Captain Emanuel Wynn (Jolly Roger flag)</p>	<p><b>Context:</b> Sandwiches and Wraps <i>Children learn about the different food types and the importance of nutritional values. They look at ingredient combinations when making their own healthy sandwich or wrap, ensuring they work hygienically</i></p> <p><b>Related Designer:</b> Jamie Oliver (Healthy meals)</p>	
<b>Year 3</b>	<p><b>Context:</b> Ancient Egyptian Shaduf <i>Children discover how levers and linkages can create moving mechanisms. They learn about what a fulcrum is and look carefully at how Ancient Egyptians used shadufs to water their crops. They use their knowledge to create their own shaduf</i></p> <p><b>Related Designer:</b> Ancient Egyptians</p>		<p><b>Context:</b> Travel Bags <i>Children use blanket stitch to create travel bags and wallets. They discover how patterns can be used to add detail to designs and experiment with and evaluate a range of fasteners to use on their product</i></p> <p><b>Related Designer:</b> Louis Vuitton (Bag maker)</p>	<p><b>Context:</b> Seasonal Vegetable Dish <i>Children look at the food to fork journey of ingredients grown in the UK. They look at seasonality and the benefits of reducing food imports. They use various cooking methods to create a dish made with seasonal ingredients</i></p> <p><b>Related Designer:</b> Yotam Ottolenghi (Vegetarian cuisine)</p>	
<b>Year 4</b>		<p><b>Context:</b> Frame Structures <i>Children use art straws and eventually wood to create frame structures. They look at how diagonal struts can be used to add strength and stiffness and how stable structures have a wise base</i></p> <p><b>Related Designer:</b> Gustave Eiffel (Eiffel Tower)</p>		<p><b>Context:</b> European Meal <i>Children look at foods and ingredients that are grown across Europe, discovering famous imports. They understand how climate impacts food production and design and adapt a meal for individuals with dietary requirements and choices</i></p> <p><b>Related Designer:</b> Antonio Carluccio (Italian cuisine)</p>	<p><b>Context:</b> Torches <i>Children use their knowledge from science to discover battery powered products and different types of switches. They use this knowledge to design and make their own torches</i></p> <p><b>Related Designer:</b> Yoshioka Tokujin (Tokyo 2020 Olympic Torch)</p>
<b>Year 5</b>		Coming soon - TBC	Coming soon - TBC	Coming soon - TBC	
<b>Year 6</b>	Coming soon - TBC	Coming soon - TBC			Coming soon - TBC

## Skill Progression: Designing

	Foundation	KS1	KS2
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul>	<ul style="list-style-type: none"> <li>design purposeful, functional, appealing products for themselves and other users based on design criteria</li> <li>generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</li> </ul>
<b>Vocabulary</b>	Material, properties, tools, plan, explore, ideas, model, drawing, discuss, build cut, join, good, bad, change	Planning, investigating, design, evaluate, make, user, purpose, ideas, design criteria, product, function, component, template	User, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, drawing, function, planning, design criteria, appealing, evaluation, cross-sectional drawing, exploded diagrams
<b>Understanding contexts, users and purposes</b>	<p>Explain what they are making and which materials they are using</p> <p>Select materials from a limited range that will meet a simple design criterion (e.g. shiny)</p> <p>Select and name the tools needed to work the materials (e.g. scissors for paper)</p> <p>Explore ideas by rearranging materials</p> <p>Describe simple models or drawings of ideas and intentions</p>	<p>To work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment</p> <p>State what products they are designing and making</p> <p>Explain whether their products are for themselves or other users</p> <p>Describe what their products are for</p> <p>Explain how their products will work</p> <p>Explain how they will make their products suitable for their intended users</p> <p>Use simple design criteria to help develop their ideas</p>	<p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</p> <p>Describe the purpose of their products</p> <p>Indicate the design features of their products that will appeal to intended users</p> <p>Explain how particular parts of their products work</p> <p>Gather information about the needs and wants of particular individuals and groups</p> <p>Develop their own design criteria and use these to inform their ideas</p>
<b>Generating, developing, modelling and communicating ideas</b>	Discuss their work as it progresses	<p>Generate ideas by drawing on their own experiences</p> <p>Use knowledge of existing products to help come up with ideas</p> <p>Develop and communicate ideas by talking and drawing</p> <p>Model ideas by exploring materials, components and construction kits and by making templates and mock-ups</p> <p>Use information and communication technology, where appropriate, to develop and communicate their ideas</p>	<p>Share and clarify ideas through discussion</p> <p>Model their ideas using prototypes and pattern pieces</p> <p>Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas</p> <p>Use computer-aided design to develop and communicate their ideas</p> <p>Generate realistic ideas, focusing on the needs of the user</p> <p>Make design decisions that take account of the availability of resources</p>

## Skill Progression: Making

	Foundation	KS1	KS2
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul> <p><u>Fine Motor Skills (ELG)</u></p> <ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paint brushes and cutlery</li> </ul>	<ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul>	<ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>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</li> </ul>
<b>Vocabulary</b>	Material, properties, tools, plan, explore, ideas, model, drawing, discuss, build cut, join, good, bad, change	Planning, investigating, design, evaluate, make, user, purpose, ideas, design criteria, product, function, component, template	User, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, drawing, function, planning, design criteria, appealing, evaluation, cross-sectional drawing, exploded diagrams
<b>Planning</b>	<p>Begin to create their design using basic techniques</p> <p>Start to build structures, joining components together</p> <p>Look at simple hinges, wheels and axles</p> <p>Use technical vocabulary when appropriate</p> <p>Begin to use scissors to cut straight and curved edges and hole pinches to punch holes</p>	<p>Plan by suggesting what to do next</p> <p>Select from a range of tools and equipment, explaining their choices</p> <p>Select from a range of materials and components according to their characteristics</p>	<p>Select materials, components, tools and equipment suitable for the task</p> <p>Explain their choice of tools and equipment in relation to the skills and techniques they will be using</p> <p>Explain their choice of materials and components according to functional properties and aesthetic qualities</p> <p>Order the main stages of making</p> <p>Produce appropriate lists of tools, equipment and materials that they need</p> <p>Formulate step-by-step plans as a guide to making</p>
<b>Practical skills and techniques</b>	<p>Explore using/holding basic tools such as a saw or hammer</p> <p>Use adhesives to join materials</p>	<p>Follow procedures for safety and hygiene</p> <p>Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components</p> <p>Measure, mark out, cut and shape materials and components</p> <p>Assemble, join and combine materials and components</p> <p>Use finishing techniques, including those from art and design</p>	<p>Follow procedures for safety and hygiene</p> <p>Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</p> <p>Measure, mark out, cut and shape materials and components with some accuracy</p> <p>Assemble, join and combine materials and components with some accuracy</p> <p>Apply a range of finishing techniques, including those from art and design, with some accuracy</p> <p>Accurately measure, mark out, cut and shape materials and components</p> <p>Demonstrate resourcefulness when tackling practical problems</p>

## Skill Progression: Evaluating

	<b>Foundation</b>	<b>KS1</b>	<b>KS2</b>
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul>	<ul style="list-style-type: none"> <li>explore and evaluate a range of existing products</li> <li>evaluate their ideas and products against design criteria</li> </ul>	<ul style="list-style-type: none"> <li>investigate and analyse a range of existing products</li> <li>evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</li> <li>understand how key events and individuals in design and technology have helped shape the world</li> </ul>
<b>Vocabulary</b>	Material, properties, tools, plan, explore, ideas, model, drawing, discuss, build cut, join, good, bad, change	Planning, investigating, design, evaluate, make, user, purpose, ideas, design criteria, product, function, component, template	User, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, drawing, function, planning, design criteria, appealing, evaluation, cross-sectional drawing, exploded diagrams
<b>Own ideas and products</b>	<p>Say what they like and do not like about items they have made and attempt to say why</p> <p>Begin to talk about their designs as they develop and identify good and bad points</p>	<p>Talk about their design ideas and what they are making</p> <p>Make simple judgements about their products and ideas against design criteria</p> <p>Suggest how their products could be improved</p>	<p>Identify the strengths and areas for development in their ideas and products</p> <p>Consider the views of others, including intended users, to improve their work</p> <p>Refer to their design criteria as they design and make</p> <p>Use their design criteria to evaluate their completed products</p>
<b>Existing products</b>	<p>Start to talk about changes made during the making process</p> <p>Discuss how closely their finished products meet their design criteria</p>	<p>Know what products are, who products are for and what products are for</p> <p>Discuss how products work, how products are used and where products might be used</p> <p>Explore what materials products are made from</p> <p>Think about what they like and dislike about products</p>	<p>Know how well products have been designed and made</p> <p>Understand why materials have been chosen</p> <p>Discover what methods of construction have been used</p> <p>Look at how well products work and how well products achieve their purposes</p> <p>Reflect on how well products meet user needs and wants</p> <p>Know who designed and made the products and when they were made</p> <p>Find out where products were designed and made</p> <p>Reflect on whether products can be recycled or reused</p>
<b>Key events and individuals</b>			Learn about inventors, designers, engineers, chefs, and manufacturers who have developed ground-breaking products

## Skill Progression: Technical Knowledge

	KS1	LKS2	UKS2
<b>Curriculum Objectives</b>	<ul style="list-style-type: none"> <li>build structures, exploring how they can be made stronger, stiffer and more stable</li> <li>explore and use mechanisms [for example, levers, sliders, wheels and axles] in their products</li> <li>use the basic principles of a healthy and varied diet to prepare dishes</li> <li>understand where food comes from</li> </ul>	<ul style="list-style-type: none"> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> <li>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> <li>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>apply their understanding of computing to program, monitor and control their products</li> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>	
<b>Vocabulary</b>	Material, component, movement, mechanism, lever, slider, structure, freestanding, product, fabric, sewing	Product, technique, project, mechanical system, input, output, process, lever, linkage, pneumatics, control, strong, stiff, shell structure, frame structure	Product, project, properties, aesthetics, characteristics, fresh, cooked, pre-cooked, electrical systems, circuit, function
<b>Making products work</b>	<p>Know about the simple working characteristics of materials and components- <i>All</i></p> <p>Understand the correct technical vocabulary for the projects they are undertaking- <i>All</i></p> <p>Learn about the movement of simple mechanisms such as levers and sliders- <i>Mechanical systems</i></p> <p>Know freestanding structures can be made stronger, stiffer and more stable- <i>Structures</i></p> <p>Discover that a 3-D textiles product can be assembled from two identical fabric shapes- <i>Textiles</i></p> <p>Understand the correct technical vocabulary for the projects they are undertaking- <i>All</i></p> <p>Learn about the movement of simple mechanisms such as wheels and axles- <i>Mechanical systems</i></p> <p>Know that food ingredients should be combined according to their sensory characteristics- <i>Cooking and Nutrition</i></p>	<p>Use learning from science to help design and make products that work- <i>All</i></p> <p>Understand the correct technical vocabulary for the projects they are undertaking- <i>All</i></p> <p>Understand that mechanical and electrical systems have an input, process and output- <i>Mechanical systems</i></p> <p>Discover how mechanical systems such as levers and linkages create movement- <i>Mechanical systems</i></p> <p>Understand that materials can be combined and mixed to create more useful characteristics- <i>Textiles</i></p> <p>Use a single fabric shape to make a 3D textiles product- <i>Textiles</i></p>	<p>Use learning from science to design and make products that work- <i>All</i></p> <p>Use learning from mathematics to help design and make products that work- <i>All</i></p> <p>Understand that materials have both functional properties and aesthetic qualities- <i>All</i></p> <p>Understand the correct technical vocabulary for the projects they are undertaking- <i>All</i></p> <p>Explore that food ingredients can be fresh, pre-cooked and processed- <i>Cooking and Nutrition</i></p> <p>Make strong, stiff frame structures- <i>Structures</i></p> <p>Know that mechanical and electrical systems have an input, process and output- <i>Electrical Systems</i></p> <p>Discover how simple electrical circuits and components can be used to create functional products- <i>Electrical Systems</i></p>

## Mechanical Systems

	Foundation	Year 1	Year 2
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul> <p><u>Fine Motor Skills (ELG)</u></p> <ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paint brushes and cutlery</li> </ul>	<ul style="list-style-type: none"> <li>explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products</li> </ul>	
<b>Vocabulary</b>	Tool, technique material, shape, assemble, purpose, user	Slider, lever, movement, direction, mechanism, join, combine, material, pivot, wheel	Function, wheel, axle, chassis, body, attach, material, measure, cut, evaluate
<b>Knowledge</b>	<p>I know tools I can use to join materials</p> <p>I know techniques I can use to join materials</p> <p>I know ways I can alter the shape of materials</p> <p>I know how to assemble materials I am using</p> <p>I know how to create a product for a specific purpose or user</p> <p>I know how to explain how my product works</p>	<p>I know what a mechanism is and can make a simple slider</p> <p>I know how to identify and change the direction of movement in a sliding image</p> <p>I know what a lever is and can combine and join materials to make a lever mechanism</p> <p>I know what a pivot is and can combine and join materials to make a wheel mechanism</p> <p>I know how to design a sliding image and discuss which mechanism would be most appropriate</p> <p>I know how to work safely with a range of tools to make a sliding image</p>	<p>I know the functions of the different parts of a fire engine and can compare current fire engines to engines from the past</p> <p>I know what a wheel, axle and chassis are, can explain their use and can identify examples in products</p> <p>I know there are 2 main ways to attach wheels to an axle so that the mechanism is still functional</p> <p>I know what materials would be best to use when designing a wheel, axle, chassis and body and can explain my reasoning</p> <p>I know how to measure and cut dowel safely to create an axle</p> <p>I know how to design, make and evaluate a fire engine that includes a wheel and axle mechanism</p>
<b>Outcome</b>	<i>Range of products throughout the year, focused on the interests of the children</i>	Explorers sliding image	Fire engines

	Year 3	Year 4	Year 5	Year 6
<b>Curriculum Objectives</b>	<ul style="list-style-type: none"> <li>understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</li> </ul>			
<b>Vocabulary</b>	Lever, linkage, mechanism, product, prototype, fulcrum, aesthetic, interactive, purpose			Pulley, gear, drive belt, mechanical system, driver, follower, spindle
<b>Knowledge</b>	<p>I know how to recognise lever and linkage systems within a range of products and explain their purpose</p> <p>I know how to make a prototype of a moving mechanism that includes a lever and linkage</p> <p>I know what a fulcrum is, can recognise it in a product and can make a model using one</p> <p>I know what a shaduf is and can identify its features, explaining how it works</p> <p>I know how to plan using annotated sketches and cross-sectional drawings to communicate ideas</p> <p>I know how to measure, cut and join accurately to ensure a mechanism fits its purpose</p>			<p>I know that mechanical and electrical systems have an input, process and an output</p> <p>I know how gears and pulleys can be used to speed up, slow down or change the direction of movement</p> <p>I know how the size of pulleys and gears can impact direction and speed of rotation</p> <p>I know how to investigate and evaluate how existing products using gears and pulleys are made and how they are used</p> <p>I know how pulley systems work and how they are used today</p> <p>I know how gear systems work and how they are used today</p> <p>I know how to develop a design brief and specification for a moving vehicle</p> <p>I know how to use appropriate tools and equipment to construct a moving vehicle</p> <p>I know how to evaluate the strengths and areas for development of the moving vehicle</p>
<b>Outcome</b>	Ancient Egyptian shaduf			Moving vehicles

## Structures

	Foundation	Year 1	Year 2
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul> <p><u>Fine Motor Skills (ELG)</u></p> <ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paint brushes and cutlery</li> </ul>	<ul style="list-style-type: none"> <li>build structures, exploring how they can be made stronger, stiffer and more stable</li> </ul>	
<b>Vocabulary</b>	Structure, design, join, build, junk modelling	Function, purpose, man-made, natural, stable, stiff, strength, material, base, weak, joint	
<b>Knowledge</b>	<p>I know how to stack objects to create a structure</p> <p>I know how to join objects together (such as Lego, Duplo, etc.) to create a structure</p> <p>I know how to use glue and tape to join materials together</p> <p>I know build a structure using junk modelling resources</p> <p>I know how to explain why a structure stands up and why a structure might fall over</p>	<p>I know the purpose of structures and can name some famous structure around the UK</p> <p>I know how to identify natural and man-made structures</p> <p>I know what is meant by stability and can identify when a structure is more or less stable than another, knowing that a structure with a flat, wide base or legs are the most stable</p> <p>I know what is meant by strength and stiffness and know that the shape of materials can be changed to improve this</p> <p>I know how the material that is used to build a structure can affect its strength, stiffness and stability</p> <p>I know how to create joints within structures made from folding, joining and rolling paper</p>	
<b>Outcome</b>	<i>Range of products throughout the year, focused on the interests of the children</i>	UK Monuments	

	Year 3	Year 4	Year 5	Year 6
<b>Curriculum Objectives</b>	<ul style="list-style-type: none"> <li>apply their understanding of how to strengthen, stiffen and reinforce more complex structures</li> </ul>			
<b>Vocabulary</b>		Frame, shell, properties, features, reinforce, diagonal struts, prototype, measure, mark, cut, join		
<b>Knowledge</b>		<p>I know what a frame and shell structure is and can compare their properties, giving examples of these structures across Europe</p> <p>I know how to identify stronger and weaker structures based on their features and shapes</p> <p>I know how to explore how to reinforce a beam (structure) to improve its strength</p> <p>I know how triangles and diagonal struts can be used to add strength and stiffness to a structure</p> <p>I know how to design a structure, what a prototype is and how to measure, mark, cut and join art straws to create a frame structure</p> <p>I know how to measure, mark, cut and join wood to create a frame structure</p>	Coming soon - TBC	Coming soon - TBC
<b>Outcome</b>		Frame structures		

## Textiles

	Foundation	Year 1	Year 2
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul> <p><u>Fine Motor Skills (ELG)</u></p> <ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paint brushes and cutlery</li> </ul>	<ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]</li> <li>select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics</li> </ul>	
<b>Vocabulary</b>	Hole, push, pull, thread, lace, pattern, repeat, colour, control, binca, stitch	Fabric, design, decorate, puppet, template, glue, sew, running stitch, technique, join, needle	Back stitch, thread, accurate, pin, stencil, sizing, proportion
<b>Knowledge</b>	<p>I know how to notice and describe a pattern</p> <p>I know how to make a pattern (including repeating patterns with three or more colours)</p> <p>I know how to follow a line by threading</p> <p>I know how to thread by pushing a lace through a series of holes</p> <p>I know how to thread beads</p> <p>I know how to create a shape by threading using binca and thick thread</p>	<p>I know that different techniques may be used to join fabrics</p> <p>I know where sewing is used in everyday life</p> <p>I know how to create a running stitch and can explain why running stitch is used</p> <p>I know how to use neat and evenly spaced stitches to join fabric</p> <p>I know how to design a hand puppet and consider the sizing</p> <p>I know how to use a template (draw round onto fabric)</p> <p>I know how to join fabric together by using glue to add decoration to a product</p>	<p>I know how to create a back stitch and can explain why back stitch is used</p> <p>I know why it is important to use neat and evenly spaced stitches to join fabric</p> <p>I know how to thread a needle</p> <p>I know how to use a template to consider proportion</p> <p>I know how to cut fabric neatly and pin fabric accurately</p> <p>I know how to join fabric together by using sewing stitches (running or back stitch) to add decoration to a product</p>
<b>Outcome</b>	<i>Range of products throughout the year, focused on the interests of the children</i>	Royal hand puppet	Flags

	Year 3	Year 4	Year 5	Year 6
<b>Curriculum Objectives</b>	<ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</li> <li>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</li> </ul>			
<b>Vocabulary</b>	Blanket stitch, design criteria, pattern, strong, secure, fastener, features, appeal, aesthetic			
<b>Knowledge</b>	<p>I know how to create a blanket stitch to join two pieces of fabric and can explain why blanket stitch is used</p> <p>I know how to create strong and secure stitches</p> <p>I know what the main type of fasteners are and can explain the benefits and disadvantages of each type of fastener</p> <p>I know what a pattern is and can design and use one to create a product of the correct size</p> <p>I know how to design and make a product based on a design criteria</p> <p>I know how to use a range of joining techniques and sewing stitches to add decorative features to a product</p>		Coming soon - TBC	
<b>Outcome</b>	Travel bag			

## Cooking and Nutrition

	Foundation	Year 1	Year 2
<b>Curriculum Objectives</b>	<p><u>Creating with Materials (ELG)</u></p> <ul style="list-style-type: none"> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function</li> <li>Share their creations, explaining the process they have used</li> </ul> <p><u>Fine Motor Skills (ELG)</u></p> <ul style="list-style-type: none"> <li>Use a range of small tools, including scissors, paint brushes and cutlery</li> </ul>	<ul style="list-style-type: none"> <li>use the basic principles of a healthy and varied diet to prepare dishes</li> <li>understand where food comes from</li> </ul>	
<b>Vocabulary</b>	Healthy, clean, sharp, safe, chop, cut, mix, cook, stir, spread, knead		Diet, balanced, healthy, unhealthy, ingredients, grow, vine, nutrients, packaging, combination, safely, hygiene
<b>Knowledge</b>	<p>I know where some foods come from</p> <p>I know how to describe food using taste, smell, texture and feel</p> <p>I know how to stir, spread, knead and shape a range of food and ingredients</p> <p>I know how to work safely and hygienically</p> <p>I know how to think about the need for a variety of foods in a diet, identifying healthy and unhealthy choices</p> <p>I know how to measure and weigh food items using non-standard units (e.g. cups)</p>		<p>I know how to taste foods and describe their appearance, smell, taste and texture</p> <p>I know that fruits and vegetables grow in one of three places: on trees/vines, above the ground or below the ground</p> <p>I know what makes a balanced diet and can identify the 5 food groups with examples</p> <p>I know approximately how much of each food group I should eat each day and can find the nutritional information of a product on packaging</p> <p>I know how to consider and review food combinations</p> <p>I know that the most ideal ingredient combinations for a meal will contain foods from more than one food group</p> <p>I know how to prepare food safely and hygienically</p>
<b>Outcome</b>	<i>Range of products throughout the year, focused on the interests of the children</i>		Healthy sandwiches and wraps

	Year 3	Year 4	Year 5	Year 6
<b>Curriculum Objectives</b>	<ul style="list-style-type: none"> <li>understand and apply the principles of a healthy and varied diet</li> <li>prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</li> <li>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed</li> </ul>			
<b>Vocabulary</b>	Weather, flavour, ingredients, method, recipe, measure, seasonality, region, importing, savoury	Climate, adapt, flavour, ingredients, method, recipe, measure, production, dietary requirements, technique, contamination	Nutrition, rubbing in, dough, bran, yeast, finishing, combine, knead, baked	
<b>Knowledge</b>	<p>I know that weather affects food growth/production</p> <p>I know what fruits and vegetables are grown in the UK and why some can't be grown successfully in the UK</p> <p>I know the seasonality of ingredients grown in the UK and can give examples of regional food produce</p> <p>I know that importing food impacts the environment and is one of the reasons why we should eat seasonal foods</p> <p>I know the process of 'farm to fork' and explain this journey for an ingredient grown in the UK</p> <p>I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking to create a savoury dish</p> <p>I know how to use a range of cooking equipment safely</p>	<p>I know that each country has its own climate and that climate affects food growth</p> <p>I know that these climates enable different fruits and vegetables to grow more successfully</p> <p>I know what European countries are famous for producing, giving reasons for this and explaining why the UK imports these items</p> <p>I know how to design and adapt a meal for different dietary requirements or lifestyle choices</p> <p>I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking and how they change the taste and texture of food</p> <p>I know the basic rules of food contamination</p>	<p>I know the different substances (nutrients, vitamins, fibre, protein etc) that are needed for health</p> <p>I know that recipes can be adapted to change appearance, taste, texture and aroma</p> <p>I know how baked products are made and how they are used</p> <p>I know how to write a step-by-step recipe, including ingredients and equipment needed, for food for a specific occasion</p> <p>I know how to create and refine recipes, including healthy seasonal ingredients, methods, cooking times and temperatures</p> <p>I know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</p> <p>I know a range of baking and cooking techniques</p> <p>I know how to measure accurately and calculate ratios of ingredients to scale up or down from a recipe</p> <p>I know how to apply a range of finishing techniques</p>	
<b>Outcome</b>	Seasonal vegetable dish	Italian themed meal	Christmas biscuits	

## Electrical Systems (KS2 only)

	Year 3	Year 4	Year 5	Year 6
<b>Curriculum Objectives</b>	<ul style="list-style-type: none"> <li>understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</li> <li>apply their understanding of computing to program, monitor and control their products</li> </ul>			
<b>Vocabulary</b>		Series circuit, fault, connection, switch, push to make, push to break, toggle, battery, wire, bulb, buzzer, control, input, output, user, purpose, function, design criteria, design brief		
<b>Knowledge</b>		<p>I know the name of some products that are battery powered and can explain how they are suited for their intended user and purpose</p> <p>I know the features, components, materials and functions (e.g. how does it work?) of a range of battery powered products</p> <p>I know how to use and make different types of switch (e.g. push to make, push to break, toggle switch) and determine which would be useful in different products</p> <p>I know how to make a simple circuit with batteries and a range of different types of switches, bulbs and buzzers</p> <p>I know how to create a design criterion that is authentic and purposeful, and display this using annotated sketches, cross-sectional drawings and/or exploded diagrams</p> <p>I know how to create a product with a circuit, that includes an output and a switch, that fulfils a design brief</p>		Coming soon - TBC
<b>Outcome</b>		Torches		