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NURTURING TODAY'S **YOUNG PEOPLE**,  
INSPIRING TOMORROW'S **LEADERS**

# Design and Technology Primary Curriculum Curriculum Plan



## Design and Technology Curriculum Intent

Our fundamental vision is to provide for pupils the opportunities to **develop the creative passion and knowledge for designing and making functional products**. In a world where there are many problems to solve, we recognise that the world of business, manufacturing and industry has an **increasing need for skilled technicians, designers and engineers**. We believe that our role is to set our pupils off on that potential career path by providing opportunities to engage in exciting and thought-provoking design and technology projects which will generate the **desire to continue the subject into the future**. When they leave us, we want our pupils to have mastered all aspects of the design and technology process and have the **motivation** to continue their journey as young designers and engineers into future learning and careers.

We believe that to cultivate such pupils, we need to create **resilient, creative problem solvers and critical thinkers**, because these are the **skills** that future businesses and industries want school leavers to have, and a **knowledge-rich, inspiring design and technology curriculum** is one of the ways of achieving this.

We will deliver a knowledge-rich curriculum that:

- Systematically develops an understanding of the design process – investigating, designing, making, evaluating, using technological knowledge and cooking and nutrition, as per the progression map below, arching across the whole primary age range.
- Focusses exciting sequences of learning on discrete component knowledge and applies these to a meaningful composite outcome, allowing children to develop functional, appealing products that are aimed at particular individuals or groups and are fit for purpose. The emphasis here is developing the knowledge of the various stages of the design process, rather than simply the end product.
- Ensures children progressively master the use and application of a range of tools and equipment through the years, such as construction kits, needles and thread and mechanical components.
- Facilitates creative learning that provides opportunities for the development of higher order thinking skills.
- Promotes analytical thinking, identifying the features, problems and solutions.
- Develops an understanding of how key events and individuals in design and technology have helped shape the world.

## Types of Knowledge in Design and Technology

Our curriculum plan begins with the **National Curriculum programmes of study** and the requirements of the **Expressive Arts and Design aspect of the EYFS framework**. The National Curriculum contains the strands of **designing, making, evaluating, technological knowledge and cooking and nutrition**, and our curriculum plan then expands upon and sequences these strands over time, in our **well-sequenced, knowledge-rich curriculum**.

We categorise the knowledge in design and technology as being substantive knowledge, disciplinary knowledge and procedural knowledge and each of these types of knowledge are carefully developing through the years through meaningful DT experiences.



### Substantive Knowledge

Firstly, the **substantive knowledge** is the **theoretical knowledge** underpinning the **four strands of mechanical systems, electrical systems, structures and textiles**, as well as the **theoretical knowledge of where food comes from and knowledge of what constitutes a healthy diet**. This is carefully developed over time. For example, you can see in the progression map that Reception pupils are taught about the *'movement of wheels and axles'* within the sub-strand of 'mechanical systems', and by the time pupils are in Upper Key Stage 2, pupils have progressively developed their schema for mechanical systems to also encompass *'cams, pulleys, gears and levers'*.

### Disciplinary Knowledge

Secondly, the **disciplinary knowledge is the component knowledge of the practical techniques** needed to create the products in our units of work, such as how to measure, mark, cut out and strengthen frames. This is also carefully developed over time. For example, you can see in the progression map that Reception pupils are taught how to *'cut and shape materials'* within the disciplinary knowledge strand of 'practical skills and techniques', and by the time pupils are in Upper Key Stage 2, pupils have progressively developed their practical, disciplinary knowledge for cutting and shaping materials to encompass *'measuring, marking out and cutting wood safely using a tenon saw.'* Disciplinary knowledge in our DT curriculum is putting the substantive knowledge into practice.

### Procedural Knowledge

Finally, we have our **procedural knowledge**, which is the knowledge of the learning journey that our pupils go on to create an innovative product, as typified by the process of **'investigate, design, make and evaluate'**. Our units of work will follow this process and this type of knowledge is also represented and sequenced in our progression map. For example, when 'generating, developing, modelling and communicating ideas', Key Stage 1 pupils *'develop and communicate ideas by talking and drawing, including labelling parts.'* By the time our pupils are in Upper Key Stage 2, this requirement to generate and communicate design ideas has developed so that pupils are then expected to *'share and clarify ideas through discussion, and use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas'*.

See overleaf for a graphical representation of these three types of knowledge in DT and the relationships between them.



## National Curriculum and EYFS Framework

### Substantive Knowledge

Theoretical knowledge of the strands of DT – 'mechanical systems', 'electrical systems', 'structures', 'textiles' and 'cooking and nutrition'

### Disciplinary Knowledge

Practical knowledge of skills and techniques within the DT strands of 'mechanical systems', 'electrical systems', 'structures', 'textiles' and 'cooking and nutrition'

DT technical vocabulary

## Procedural Knowledge

### Investigate

Investigate and analyse existing products  
Key events and individuals from the world of DT



### Design

Design innovative, functional, appealing products



### Make

Construct using tools, equipment, materials and components



### Evaluate

Evaluate and improve designs



## Design and Technology Curriculum Implementation

There are four key elements to the implementation of the DT curriculum:

- **Plan:** each lesson is judiciously planned to identify the different types of knowledge that the lesson focusses on. It builds on pupils' prior learning, drawing upon previously lessons and the prior learning as identified in the knowledge micro-maps.
- **Teach:** the Classroom Charter and High 5 Charter is used when implementing the DT curriculum.
- **Assess:** pupils are given fluency composite tasks that enable pupils to demonstrate their understanding of the component knowledge.
- **Intervene and re-teach:** composite tasks identify knowledge components that are not secure. These are re-taught before moving on, or are particularly focused on when the pupils encounter their next knowledge-rich DT unit of work.

### Our Classroom Charter

Our Classroom charter sets out some of the central pedagogical strategies that we use for the implementation of our Design and Technology curriculum plan. These include:

*[school to add here their three DT strategies, drawn from their bespoke Classroom Charter],*

### All Stars Succeed

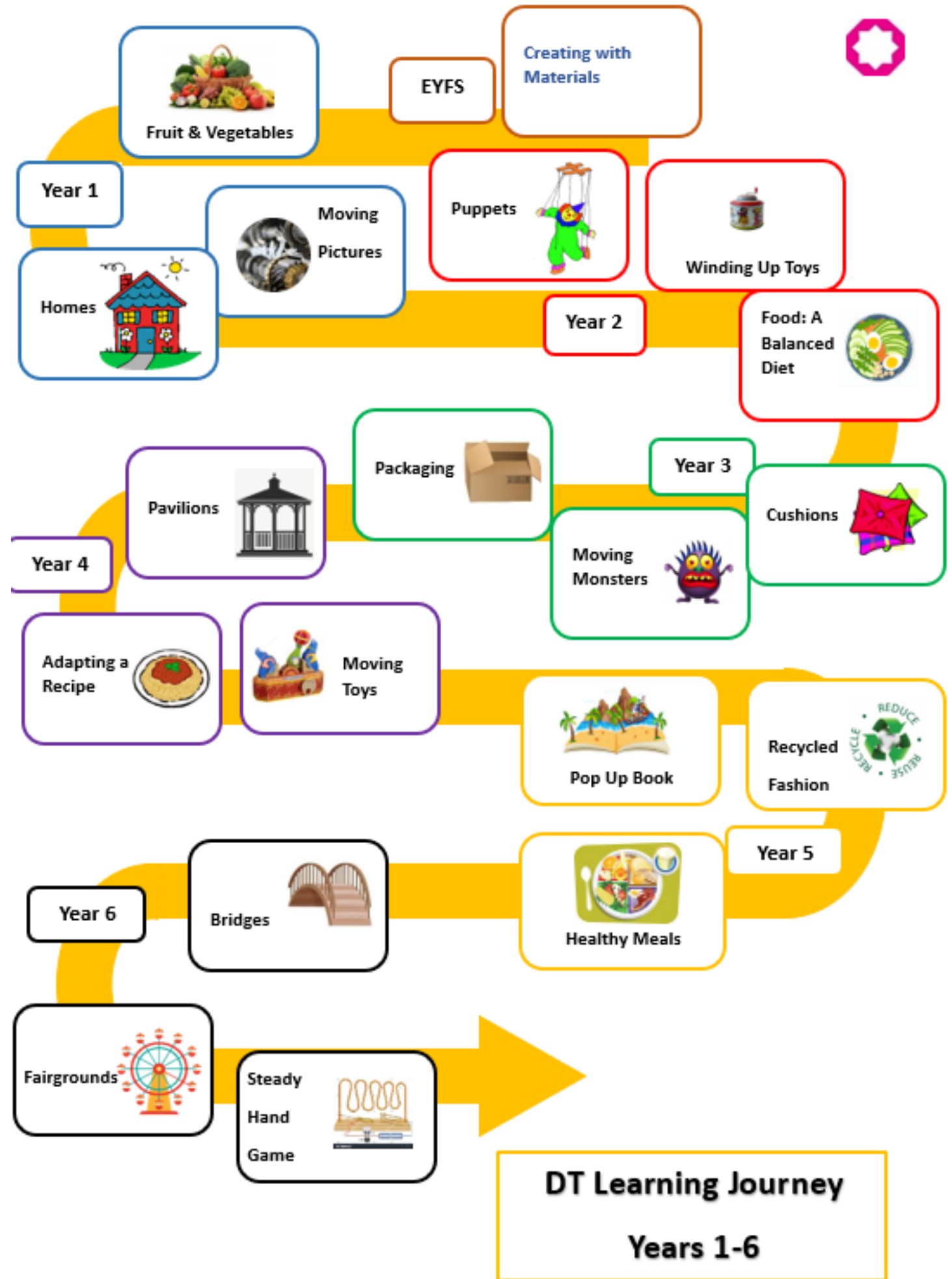
We are ambitious for all of our pupils, including those with SEND. We aim for all SEND pupils to achieve the same outcomes as other pupils in DT lessons, with adaptive strategies being used to tailor the lesson sequence and delivery as required.

Many pedagogical adaptations we make exist within our All Stars Succeed Handbook, which all staff know and use. Within this document are the important High Five Strategies:

- **Know the Child.** We use Star Maps, ensure unconditional positive regard and ensure SEND pupils are heard and understood.
- **Plan Creatively.** We group pupils flexibly according to need, utilise support staff wisely and ensure that SEND pupils can access the teacher in the classroom.
- **Clear and Consistent Language.** When teaching, we: give clear instructions and explanations; allow processing time; re-use and rehearse technical language; utilise the lesson cycle structure of 'I do, we do you do'; check pupils understand; and then 'stamp' the learning.
- **Scaffold.** When teaching, we: pre-teach vocabulary; chunk knowledge; repeat the use of visuals; use WAGOLLs word banks and writing frames; and model the thinking.
- **Know More, Remember More.** We use a range of formative and summative assessment methods including DNAs, targeted questioning, Exit Tickets and fluency composites, used in conjunction with the DT assessment framework.

We also use DT-specific All Stars Succeed adaptations in lessons. One of our central ones, *[school to add here]*, is included in Our Classroom Charter. Sitting behind this are other important strategies that are also particularly important for DT. These include:

- Ensuring fluency composite tasks are personally motivating.
- Allowing pupils to develop their disciplinary knowledge at their own pace.
- Using step-by-step processes to minimise barriers.
- Making the project meaningful by relating to real life concepts.





	Year R	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<p><b>National Curriculum and EYFS Framework</b></p> <p><i>Pupils should be taught to:</i></p>	<p><b>ELG Expressive arts and design:</b> <b>Creating with materials</b> '...safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.'</p> <p>'Share their creations, explaining the process they have used.'</p> <p>'Make use of props and materials when role playing characters in narratives and stories.'</p>	<p><b>Design</b></p> <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> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>select from and use a range of tools and equipment to perform practical tasks</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> <p><b>Evaluate</b></p> <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> <p><b>Technical Knowledge</b></p> <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, in their products</li> </ul> <p><b>Cooking &amp; Nutrition</b></p> <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>	<p><b>Design</b></p> <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> <p><b>Make</b></p> <ul style="list-style-type: none"> <li>select from and use a wider range of tools and equipment to perform practical tasks 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> <p><b>Evaluate</b></p> <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> <p><b>Technological Knowledge</b></p> <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</li> <li>understand and use electrical systems in their products</li> <li>apply their understanding of computing to programme, monitor and control their products.</li> </ul> <p><b>Cooking &amp; Nutrition</b></p> <ul style="list-style-type: none"> <li>understand and apply the principles of a healthy and varied diet</li> <li>cook a repertoire of predominantly savoury dishes so that they are able to feed themselves and others a healthy and varied</li> <li>become competent in a range of cooking techniques [for example, selecting and preparing ingredients; using utensils and electrical equipment; applying heat in different ways; using awareness of taste, texture and smell to decide how to season dishes and combine ingredients; adapting and using their own recipes]</li> <li>understand the source, seasonality and characteristics of a broad range of ingredients</li> </ul>				



Substantive Knowledge. Pupils should know that:				
	Year R	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>TEXTILES</b>		<p>A running stitch can be used to join two pieces of fabric together.</p> <p>A template (or fabric pattern) is used to cut out the same shape multiple time.</p>	<p>A cross-stitch is stronger than a running stitch because it works in different directions.</p> <p>Applique is a way of mending or decorating a textile by applying smaller pieces of fabric to larger pieces.</p> <p>When two edges of fabric have been joined together it is called a seam.</p> <p>It is important to leave space on the fabric for the seam.</p> <p>Some products are turned inside out after sewing so the stitching is hidden.</p>	<p>The blanket stitch is useful to reinforce the edges of a fabric material or join two pieces of fabric.</p> <p>The back stitch is a strong stitch and also be used for decoration.</p> <p>Small, neat stitches which are pulled taut are important, including when creating seams.</p> <p>Using a template (or clothing pattern) helps to accurately mark out a design on fabric.</p>
<b>COOKING AND NUTRITION</b>	<p>All food comes from plants or animals.</p> <p>The names of key, basic foodstuffs; some foods are healthy and some are unhealthy.</p> <p>Everyone should eat at least five portions of fruit and vegetables every day.</p>	<p>All food comes from plants or animals, and that food has to be farmed, grown elsewhere (e.g. home) or caught.</p> <p>The names and groups of some foods, according to the Eatwell Plate.</p> <p>Everyone should eat at least five portions of fruit and vegetables every day.</p> <p>There are 'hidden sugars'.</p> <p>There is nutritional information on a drinks containers.</p>	<p>Food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</p> <p>A healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate.</p> <p>To be active and healthy, food and drink are needed to provide energy for the body.</p>	<p>Different food and drink contain different substances – nutrients, water and fibre – that are needed for health, and make comparisons between different foodstuffs.</p> <p>About nutritional labelling on food packets and make comparisons.</p> <p>Recipes can be adapted to change the appearance, taste, texture and aroma.</p>
<b>Mechanical Systems/ Electrical Systems</b>		<p>A mechanism is the parts of an object that move together.</p> <p>A slider mechanism moves an object in a straight line.</p> <p>A rotary mechanism moves an object in a curved way.</p> <p>Wheels need to be round to rotate and move.</p> <p>For a wheel to move it must be attached to a rotating axle.</p> <p>An axle moves within an axle holder which is fixed to the vehicle or toy.</p>	<p>Air can be used to create mechanisms and these are called pneumatic systems.</p> <p>A pneumatic system can force air across a distance to make a mechanism work.</p> <p>A cam turns a turning motion into a linear motion.</p> <p>Different shape cams create different movements.</p> <p>Inputs are motions that start mechanisms and outputs are the resultant motions.</p>	<p>Inputs are motions that start mechanisms and outputs are the resultant motions.</p> <p>Different mechanisms control movement in different ways.</p> <p>Rotary motion is a circular path in one direction</p> <p>Reciprocating motion is back and forwards in a straight line.</p> <p>Oscillating motion is in a circular path, first one way then the other.</p> <p>Electric circuits can be incorporated into products.</p>





Substantive Knowledge. <i>Pupils should know that:</i>				
	Year R	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Structures</b>	Structures need to be strong.	Structures need to be strong and stable. Roofs need to be waterproof. Windows need to be transparent. Structures with a wide base are stable. Cylinders and corrugated shapes make strong structures. Hinges allow parts of a structure to open and close.	Sheets within structures can be strengthened by folding and shaping, corrugating, ribbing and laminating. Structures with a square or rectangular base are strong and stable. Structures with diagonal struts are strong and stable. Pavilions are a type of temporary or permanent enclosure.	There are beam, arch and truss bridges. Arches increase the strength of bridges. Truss bridges use triangles to strengthen beams.



<b>Disciplinary Knowledge</b> <i>Pupils should know how to:</i>				
	<b>Year R</b>	<b>Key Stage 1</b>	<b>Lower Key Stage 2</b>	<b>Upper Key Stage 2</b>
<b>Practical skills and techniques</b>	Use a small range of materials such as textiles and food ingredients.	Use a small range of materials and components, such as construction kits, textiles, food ingredients and mechanical components.	Begin to use a wider range of materials and components than KS1, such as construction materials and kits, textiles, wood, food ingredients, mechanical and electric components.	Use a wide range of materials and components, such as construction materials and kits, textiles, wood, food ingredients, mechanical and electric components.
<b>Mechanical and Electrical Systems</b>	<p>Cut and shape materials</p> <p>With support, assemble, join and combine materials using a range of methods – e.g. masking tape, glue, staples</p>	<p>Assemble, join and combine materials to make simple mechanisms using masking tape, glue and split pins.</p> <p>Assemble, join and combine materials/ to make simple wheels and axles and pulleys.</p>	<p>Assemble, join and combine materials and components to make simple pneumatic systems.</p> <p>Assemble, join and combine materials and components to make simple cam mechanisms.</p>	<p>Assemble, join and combine materials and components to make a range of different mechanisms.</p> <p>Use layers and spacers to hide mechanisms.</p> <p>Incorporate a circuit into a product base.</p>
<b>Textiles</b>	With support, decorate fabrics with attached items - e.g. buttons, beads, sequins, braids, ribbons.	<p>Measure, mark out, cut and shape materials/components, including cutting fabric from a template.</p> <p>Assemble, join and combine materials and component using a range of methods – e.g. masking tape, glue, staples, running stitch.</p> <p>With support, decorate fabrics with attached items - e.g. buttons, beads, sequins, braids, ribbons.</p>	<p>Measure, mark out, cut, shape and score materials/components with some accuracy.</p> <p>Assemble, join and combine materials and components with some accuracy, using a range of methods - e.g. masking tape, glue, staples, running stitch, cross-stitch, applique.</p> <p>Sew on buttons and make loops.</p>	<p>Measure, mark out, cut, shape and score materials and components to the nearest 1mm.</p> <p>Accurately assemble, join and combine materials and components, using a range of methods - e.g. masking tape, glue, staples, running stitch, back stitch, blanket stitch, applique glue gun and modelling wire.</p> <p>Decorate textiles appropriately (often before joining components).</p>
<b>Structures</b>	Explore how to make structures stronger.	<p>Assemble, join and combine materials to make strong and stable structures.</p> <p>Assemble, join and combine materials to make simple hinges .</p>	<p>Assemble, join &amp; combine paper to strengthen structures – e.g. folding and shaping, corrugating, ribbing, laminating.</p> <p>Join structural beams to create strong and stable structures.</p> <p>Add diagonal struts to increase stability.</p> <p>Create a free-standing structure.</p> <p>Create different textured cladding effects.</p>	<p>Assemble, join &amp; combine paper to strengthen bridges – e.g. folding and shaping, corrugating, ribbing, laminating, arching.</p> <p>Strengthen bridges with triangular trusses.</p> <p>Measure, mark out and cut wood safely using a tenon saw.</p>



<b>Disciplinary Knowledge</b> <i>Pupils should know how to:</i>				
	<b>Year R</b>	<b>Key Stage 1</b>	<b>Lower Key Stage 2</b>	<b>Upper Key Stage 2</b>
<b>COOKING AND NUTRITION</b>	<p>Begin to understand how to prepare simple dishes, without a heat source.</p> <p>Begin to develop food vocabulary using taste, smell, texture and feel.</p>	<p>With support, know how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Taste test food combinations.</p> <p>Develop food vocabulary using taste, smell, texture and feel.</p>	<p>Begin to know how to prepare and cook safely and hygienically including, where appropriate, the use of a heat source.</p> <p>Develop sensory vocabulary/knowledge using, smell, taste, texture and feel.</p>	<p>Know how to prepare and cook and hygienically including, where appropriate, the use of a heat source.</p> <p>Develop sensory vocabulary/knowledge using, smell, taste, texture and feel</p>
<b>MIX/STIR</b>	<p>Loosely combine ingredients.</p> <p>Mash ingredients together using a fork.</p>	<p>Combine ingredients with increasing thoroughness.</p>	<p>Combine any ingredients thoroughly.</p> <p>Whisk foods using a hand whisk.</p>	<p>Fold ingredients together carefully.</p> <p>Whisk foods using a hand whisk.</p>
<b>SPOON</b>	<p>Spoon ingredients between containers.</p>	<p>Spoon ingredients into different containers with increasing accuracy and minimal spillage.</p>	<p>Use two spoons to transfer ingredients into different size/shape containers with minimal spillage - e.g. liquid foods into baking cases.</p>	<p>Gauge the quantities spooned to ensure an equal amount of ingredient in each container.</p>
<b>MEASURE</b>	<p>Begin to measure and weigh food items, using non-standard measures e.g. spoons, cups. Count ingredients.</p>	<p>Measure and weigh food items, using non-standard measures e.g. spoons, cups, and standard measures, in accordance with the KS1 NC for Maths.</p>	<p>Weigh and measure using scales and standard measures, in accordance with the Year 3/4 NC for Maths – e.g. measuring jugs and digital scales.</p>	<p>Weigh and measure using scales with increasing accuracy, in accordance with the Year 5/6 NC for Maths – e.g. – e.g. measuring jugs and digital/analogue scales.</p>
<b>GRATING</b>		<p>Grate soft foods - e.g. cheese, cucumber.</p>	<p>Grate firmer foods - e.g. carrots, apples.</p>	<p>Grate independently, and use the other parts of a grater (e.g. zesting) as needed.</p>
<b>TEARING AND SNIPPING</b>	<p>Tear fresh herbs</p>	<p>Snip fresh herbs or spring onion.</p>	<p>Tear and shred with greater dexterity – e.g. shredding lettuce.</p>	<p>Tear and shred with greater dexterity – e.g. shredding lettuce.</p>
<b>THREADING</b>		<p>Thread soft foods onto kebab sticks or cocktail sticks - e.g. soft fruits.</p>	<p>Thread medium-resistance foods onto kebab sticks -e.g. courgettes.</p>	<p>Thread high-resistance foods onto kebab sticks – e.g. onions, peppers.</p>
<b>CUTTING</b>	<p>Cut soft foods with butter knife, e.g. banana, canned peach slices.</p>	<p>Cut low resistance foods with a table knife into equal size pieces/slices - e.g. canned pineapple slices, sticks of pepper, mushrooms.</p> <p>Use a fork to secure foods.</p>	<p>Cut medium resistance foods with a vegetable knife - e.g. cucumber.</p> <p>Use a fork or the claw grip to secure foods.</p> <p>Cut medium resistance or partly prepared foods using a bridge hold - e.g. cut half a tomato into a quarter, halve canned potatoes, halve large grapes.</p>	<p>Cut higher resistance foods with a vegetable knife, using the claw grip - e.g. celery, carrots.</p> <p>Cut higher resistant foods from whole using the bridge hold - e.g. halve an apple, raw potato.</p>
<b>FOLLOWING</b>	<p>Follow simple instructions given by an adult.</p>	<p>Follow a simple recipe supported by an adult.</p>	<p>Follow a simple recipe with guidance from an adult and adapt it as needed</p>	<p>Follow and modify a simple recipe independently.</p>



Procedural Knowledge: <i>Pupils should know how to...</i>				
	Year R	Key Stage 1	Lower Key Stage 2	Upper Key Stage 2
<b>Understanding contexts, users and purposes</b>	<p>Work within a small range of familiar contexts, such as imaginary, story-based, home, school, gardens, playgrounds and the local community.</p> <p>Begin to state what products they're designing &amp; making, who they are for, how they work,.</p>	<p>Work within a small range of familiar contexts, such as imaginary, story-based, home, school, gardens, playgrounds and the local community.</p> <p>State what products they are designing and making, who they are for, how they work, and how they will make them suitable.</p> <p>Develop design criteria with support.</p>	<p>Work within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.</p> <p>Begin to describe the purpose of their products and their design features, explaining how particular parts of their products work.</p> <p>Begin to gather information about the needs/ wants of individuals and groups, and develop their own design criteria.</p>	<p>Work confidently and independently within a broad range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment.</p> <p>Describe the purpose of their products and their design features, explaining in detail how particular parts of their products work.</p> <p>Gather information about the needs and wants of particular individuals and groups, develop their own design criteria and use these to inform their ideas.</p>
<b>INVESTIGATING: existing products</b>	<p>Explore:</p> <ul style="list-style-type: none"> <li>•what products are</li> <li>•who/what products are for</li> <li>•how products work</li> <li>•where products are used</li> <li>•what materials are used</li> <li>•what they like and dislike about products</li> </ul>	<p>Explore:</p> <ul style="list-style-type: none"> <li>•what products are</li> <li>•who products are for</li> <li>•what products are for</li> <li>•how products work</li> <li>•where products are used</li> <li>•what materials products are made from</li> <li>•what they like and dislike about products</li> </ul>	<p>Begin to investigate and analyse:</p> <ul style="list-style-type: none"> <li>•how well products have been designed and made</li> <li>•why materials have been chosen</li> <li>•how well products work and achieve their purposes</li> <li>•how well products meet user needs and wants</li> <li>•who designed and made the products</li> <li>•whether products can be recycled or reused</li> <li>•inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</li> </ul>	<p>Investigate and analyse:</p> <ul style="list-style-type: none"> <li>•how well products have been designed and made</li> <li>•why materials have been chosen</li> <li>•how well products work and achieve their purposes</li> <li>•how well products meet user needs and wants</li> <li>•who designed and made the products</li> <li>•how much products cost to make</li> <li>•how innovative products are</li> <li>•how sustainable the materials in products are</li> <li>•what impact products have beyond intended purpose</li> <li>•inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</li> </ul>
<b>DESIGNING: Generating, developing, modelling and communicating ideas</b>	<p>Explore simple ideas.</p> <p>Develop and communicate ideas by talking and drawing.</p> <p>Begin to model ideas by exploring materials.</p>	<p>Generate ideas by drawing on their own experiences and knowledge of existing products.</p> <p>Develop and communicate ideas by talking and drawing, including labelling parts.</p> <p>Model ideas by exploring materials, components &amp; construction kits.</p> <p>With support, use ICT to develop and communicate ideas.</p>	<p>Generate realistic ideas, focusing on the needs of the user.</p> <p>Begin to share and clarify ideas through discussion, and use annotated sketches and labelled drawings from different viewpoints to develop and communicate their ideas.</p> <p>Begin to model their ideas using prototypes.</p> <p>Use information and communication technology, where appropriate, to develop and communicate their ideas.</p>	<p>Generate realistic ideas, focusing on the needs of the user and drawing on research.</p> <p>Share and clarify ideas through discussion. Use annotated sketches, cross-sectional and perspective drawings and exploded diagrams to develop and communicate their ideas.</p> <p>Model their ideas using prototypes.</p> <p>Use CAD to develop and communicate their ideas.</p>
<b>DESIGNING: Planning</b>	<p>Select from a range of tools, equipment and materials.</p>	<p>Select from a range of tools and equipment.</p> <p>Select from a range of materials and components according to their characteristics.</p>	<p>Select tools and equipment suitable for the task.</p> <p>Select materials and components suitable for the task.</p> <p>Plan and order the stages of making.</p>	<p>Select tools and equipment suitable for the task, explaining their choice in relation to the skills/techniques used.</p> <p>Select suitable materials/components. explaining choices according to functional and aesthetic qualities.</p> <p>Produce appropriate lists of tools, equipment and materials that they need and formulate step-by-step plans.</p>
<b>MAKING</b>	<p>Make a simple product with support.</p>	<p>Follow procedures for safety and hygiene.</p> <p>Follow a simple plan to make a product, following design criteria with support.</p>	<p>Follow procedures for safety and hygiene.</p> <p>Follow design criteria to create a product.</p>	<p>Follow procedures for safety and hygiene.</p> <p>Follow design criteria to create a product.</p>
<b>EVALUATING: own products</b>		<p>Evaluate a finished product against design criteria, explaining likes and dislikes.</p>	<p>Evaluate an end product against own design criteria, consider the views of others, and think of ways to improve the design.</p> <p>Evaluate their ideas and products against their original design specification, and begin to think about the needs of the user.</p>	<p>Reflect on their work continually throughout the design, make and evaluate.</p> <p>Evaluate their ideas and products against their original design specification, thinking about the needs of the user.</p>



**3 Design and Technology Topics Per Year...**

	<b>Year 1</b>	<b>Year 2</b>	<b>Year 3</b>	<b>Year 4</b>	<b>Year 5</b>	<b>Year 6</b>
<b>Topic 1</b>	Homes (Structures)	Winding Up Toys (Mechanical Systems) [change road map]	Packaging (Structures)	Pavilions (Structures)	Recycled Fashion (Textiles)	Bridges (Structures)
<b>Topic 2</b>	Moving Pictures (Mechanical Systems)	Puppets (Textiles)	Cushions (Textiles)	Adapting a recipe (Cooking and nutrition)	Pop Up Book (Mechanical)	Steady Hand Game (Electrical)
<b>Topic 3</b>	Fruit and Vegetables (Cooking and Nutrition)	Food: A Balanced Diet (Cooking and Nutrition)	Moving Monsters (Mechanical Systems)	Moving Toys (Mechanical/Electrical)	Healthy Meals (Cooking and Nutrition)	Fairgrounds (Mechanical/electrical)