


# DESIGN AND TECHNOLOGY

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## **Purpose of Study**

Design and Technology (DT) is a practical subject. Using creativity and imagination, pupils design and make products that solve real relevant problems within a variety of contexts. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world.

Our aims in teaching DT are that all children will:

- take part in creative and practical activities;
- understand the importance of design and technology in the wider world;
- develop imaginative thinking and enable them to talk about what they like and dislike when designing and making things;
- talk about how things work, and to draw and model their ideas;
- explore computing as a means of design;
- be analytical and critical when they are considering and analysing products;
- select appropriate materials, tools and techniques for making a product;
- follow safe procedures when using equipment;
- explore attitudes towards the 'made' world and how we live and work within it;
- develop an understanding of technological processes and products, their manufacture and their contribution to society;
- foster enjoyment, satisfaction and purpose in designing and making things.

## National Curriculum

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

EYFS - Reception	Key Stage 1	Key Stage 2
<p>Pupils should be taught to:</p> <p>Physical Development</p> <ul style="list-style-type: none"> <li>• Use a range of small tools, including scissors, paintbrushes and cutlery.</li> </ul> <p>Expressive Arts and Design</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>Pupils should be taught to:</p> <p>Design</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>Make</p> <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> <p>Evaluate</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>Pupils should be taught to:</p> <p>Design</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>Make</p> <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> <p>Evaluate</p> <ul style="list-style-type: none"> <li>• Investigate and analyse a range of existing products.</li> </ul>

	<p>Technical Knowledge</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 [for example, levers, sliders, wheels and axles], in their products.</li> </ul> <p>Cooking and Nutrition</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>	<ul style="list-style-type: none"> <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>Technical Knowledge</p> <ul style="list-style-type: none"> <li>• Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.<sup>4</sup></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> </ul> <p>Cooking and Nutrition</p> <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>
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## Content

### The contribution of DT to teaching in other curriculum areas

DT helps you to teach Maths and English and indeed other compulsory subjects on the curriculum in a fun manner and put these subjects into context making them easier to digest and more understandable to younger primary age pupils.

DT gives children the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designed and made world in which we all live and work.

### Quality of Education

#### Intent

Design and Technology aims to inspire children through a broad range of practical experiences to create innovative designs which solve real and relevant problems within a variety of different contexts. The iterative design process is fundamental and runs throughout our units. This iterative process encourages children to identify real and relevant problems, critically evaluate existing products and then take risks and innovate when designing and creating solutions to the problems. As part of the iterative process, time is built in to reflect, evaluate and improve on prototypes using design criteria throughout to support this process. Opportunities are provided for children to evaluate key events and individuals who have helped shape the world, showing the real impact of design and technology on the wider environment and helping to inspire children to become the next generation of innovators.

#### Implementation

Design and Technology skills and understanding are built into lessons, following an iterative process. However, this is not to say that this structure should be followed rigidly: it allows for the revision of ideas to become part of good practice and ultimately helps to build a depth to children's understanding. Through revisiting and consolidating skills, our lesson plans and resources help children build on prior knowledge alongside introducing new skills, knowledge and challenge. We suggest a specific series of lessons for each key stage, which offer structure and narrative but are by no means to be used exclusively, rather to support planning. The revision and introduction of key vocabulary is built into each lesson. This vocabulary is then included in display materials and additional resources to ensure that children are allowed opportunities to repeat and revise this knowledge. Adult guides and accurate design and technology subject knowledge are always provided within lessons to allow the teacher and adults working in those lessons to feel confident and supported with the skills and knowledge that they are teaching.

Through these lessons, we intend to inspire pupils and practitioners to develop a love of Design and Technology and see how it has helped shaped the ever-evolving technological world they live in.

#### Impact

The impact of using the full range of resources, including display materials, will be seen across the school with an increase in the profile of Design and Technology. The learning environment across the school will be more consistent with design and technology technical vocabulary displayed, spoken and used by all learners. We want to ensure that Design and Technology is loved by teachers and pupils

across school, therefore encouraging them to want to continue building on this wealth of skills and understanding, now and in the future. Impact can also be measured through key questioning skills built into lessons, child-led assessment such as success criteria grids, jigsaw targets and KWL grids and summative assessments aimed at targeting next steps in learning.

## Progression of Knowledge

Substantive knowledge is based on the knowledge of four key elements of the process of design: design, make, evaluate and technical knowledge.

Design	Know how to design a product that is purposeful, functional and appealing to a specific group.
Make	Know how to safely and carefully cut, join and finish a range of materials, ranging from paper to wood.
Evaluate	Know how to investigate, evaluate and analyse a range of products and their own designs based on specific criteria.
Technical knowledge	Know how to apply their knowledge of materials to meet the criteria above in the design, make and evaluate stages. Use technical vocabulary with confidence and accuracy.

Strand	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Design</b>	<p>Select appropriate resources.</p> <p>Use gestures, talking and arrangements of materials and components to show design.</p> <p>Use contexts set by the teacher and myself.</p> <p>Use language of designing and making (join, build, shape, longer, shorter, heavier etc.)</p>	<p>Have own ideas.</p> <p>Explain what I want to do.</p> <p>Explain what my product is for, and how it will work.</p> <p>Use pictures and words to plan, begin to use models.</p> <p>Design a product for myself following design criteria.</p> <p>Research similar existing</p>	<p>Have own ideas and plan what to do next.</p> <p>Explain what I want to do and describe how I may do it.</p> <p>Explain purpose of product, how it will work and how it will be suitable for the user.</p> <p>Describe design using pictures, words, models, diagrams, begin to use ICT.</p> <p>Design products</p>	<p>Begin to research others' needs show design meets a range of requirements.</p> <p>Describe purpose of product follow a given design criteria.</p> <p>Have at least one idea about how to create product.</p> <p>Create a plan which shows order, equipment and tools.</p> <p>Describe design using an accurately labelled sketch and</p>	<p>Use research for design ideas.</p> <p>Show design meets a range of requirements and is fit for purpose.</p> <p>Begin to create own design criteria.</p> <p>Have at least one idea about how to create product and suggest improvements for design.</p> <p>Produce a plan and explain it to others.</p> <p>Say how realistic plan is.</p> <p>Include an annotated</p>	<p>Use internet and questionnaires for research and design ideas.</p> <p>Take a user's view into account when designing.</p> <p>Begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose.</p> <p>Create own design criteria.</p> <p>Have a range of ideas.</p>	<p>draw on market research to inform design</p> <p>use research of user's individual needs, wants, requirements for design</p> <p>identify features of design that will appeal to the intended user</p> <p>create own design criteria and specification</p> <p>come up with innovative design ideas</p> <p>*follow and refine a logical plan.</p> <p>*use annotated sketches, cross-</p>

		products.	for myself and others following design criteria.  Choose best tools and materials, and explain choices.  Use knowledge of existing products to produce ideas.	words.  Make design decisions.  Explain how product will work make a prototype begin to use computers to show design.	sketch.  Make and explain design decisions considering availability of resources.  Explain how product will work.  Make a prototype.  Begin to use computers to show design.	Produce a logical, realistic plan and explain it to others.  Use cross-sectional planning and annotated sketches.  Make design decisions considering time and resources.  Clearly explain how parts of product will work.  Model and refine design ideas by making prototypes and using pattern pieces.  Use computer-aided designs.	sectional planning and exploded diagrams make design decisions, considering, resources and cost clearly explain how parts of design will work, and how they are fit for purpose independently model and refine design ideas by making prototypes and using pattern pieces use computer-aided designs
<b>Design specific vocabulary</b>	Plan, Draw, Ideas, Design	Prepare, Materials, Template, Use Model,	Development, Market research, Survey	Organise, Criteria, Labels, Purpose	Initial ideas, Annotate, Diagrams	Prototype, Target audience, Constraints, Client	Brief, Product, Consumer, Customer, Application
<b>Make</b>	Construct with a purpose, using a variety of resources.  Use simple tools and techniques.  Build / construct with a wide range of objects.  Select tools &	Explain what I'm making and why.  Consider what I need to do next.  Select tools/equipment to cut, shape, join, finish and explain choices.	Explain what I am making and why it fits the purpose.  Make suggestions as to what I need to do next.  Join materials/ components together in different ways.	Select suitable tools/equipment, explain choices; begin to use them accurately.  Select appropriate materials, fit for purpose.  Work through plan in order.  Consider how good product will be.	Select suitable tools and equipment, explain choices in relation to required techniques and use accurately.  Select appropriate materials, fit for purpose; explain choices.  Work through plan in order.	Use selected tools/equipment with good level of precision.  Produce suitable lists of tools, equipment /materials needed.  Select appropriate materials, fit for purpose; explain	use selected tools and equipment precisely.  Produce suitable lists of tools, equipment, materials needed, considering constraints.  Select appropriate materials, fit for

	<p>techniques to shape, assemble and join.</p> <p>Replicate structures with materials / components.</p> <p>Discuss how to make an activity safe and hygienic.</p> <p>Record experiences by drawing, writing, voice recording.</p> <p>Understand different media can be combined for a purpose.</p>	<p>Measure, mark out, cut and shape, with support.</p> <p>Choose suitable materials and explain choices.</p> <p>Try to use finishing techniques to make product look good.</p> <p>Work in a safe and hygienic manner.</p>	<p>Measure, mark out, cut and shape materials and components, with support.</p> <p>Describe which tools I'm using and why.</p> <p>Choose suitable materials and explain choices depending on characteristics.</p> <p>Use finishing techniques to make product look good.</p> <p>Work safely and hygienically.</p>	<p>Begin to measure, mark out, cut and shape materials/ components with some accuracy.</p> <p>Begin to assemble, join and combine materials and components with some accuracy.</p> <p>Begin to apply a range of finishing techniques with some accuracy.</p>	<p>Realise if product is going to be good quality measure, mark out, cut and shape materials/ components with some accuracy.</p> <p>Assemble, join and combine materials and components with some accuracy.</p> <p>Apply a range of finishing techniques with some accuracy.</p>	<p>choices, considering functionality.</p> <p>Create and follow detailed step-by-step plan.</p> <p>Explain how product will appeal to an audience.</p> <p>Mainly accurately measure, mark out, cut and shape materials/ components.</p> <p>Mainly accurately assemble, join and combine materials/ components.</p> <p>Mainly accurately apply a range of finishing techniques.</p> <p>Use techniques that involve a small number of steps.</p> <p>Begin to be resourceful with practical problems.</p>	<p>purpose.</p> <p>Explain choices, considering functionality and aesthetics.</p> <p>Create, follow, and adapt detailed step-by-step plans.</p> <p>Explain how product will appeal to audience.</p> <p>Make changes to improve quality Accurately.</p> <p>Measure, mark out, cut and shape materials/ components.</p> <p>Accurately assemble, join and combine materials/ components.</p> <p>Accurately apply a range of finishing techniques.</p> <p>Use techniques that involve a number of steps be resourceful with practical problems.</p>
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<b>Make specific vocabulary</b>	Make, Build, Combine, Join Shape, Tools	Fast, Slow, Up, Down, Turn, Draw, Tools, Glue, Attach, Brick, Wood, Metal, Paper, Cardboard, String, Clay, Scissors, Cut, Stick, Decorate	Faster, Slower, Wind up, Design, Sketch, Fix, Features, Stone, Cloth, Foam, Felt, Rigid, Tissue, Newspaper, Tape, Stable, Structure, Wool	Materials, Mould, Liquid, Solid, Shape,	Form, Adhesive, Dimensions, Durable, Presentation	Girder, Rafter, Strut, Packaging, Machine made	Lattice, Mass-produce, Cross Brace, Cantilever
<b>Evaluate</b>	<p>Adapt work if necessary.</p> <p>Dismantle, examine, talk about existing objects/ structures.</p> <p>Consider and manage some risks.</p> <p>Practise some appropriate safety measures independently.</p> <p>Talk about how things work.</p> <p>Look at similarities and differences between existing objects / materials / tools.</p>	<p>Talk about my work, linking it to what I was asked to do talk about existing products considering: use, materials, how they work, audience, where they might be used.</p> <p>Talk about existing products, and say what is and isn't good.</p> <p>Talk about things that other people have made.</p> <p>Begin to talk about what could make product better.</p>	<p>Describe what went well, thinking about design criteria.</p> <p>Talk about existing products considering: use, materials, how they work, audience, where they might be used.</p> <p>Express personal opinion.</p> <p>Evaluate how good existing products are.</p> <p>Talk about what I would do differently if I were to do it again and why.</p>	<p>Look at design criteria while designing and making.</p> <p>Use design criteria to evaluate finished product.</p> <p>Say what I would change to make design better.</p> <p>Begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose.</p> <p>Begin to understand by whom, when and where products were designed.</p> <p>Learn about some inventors/designers</p>	<p>Refer to design criteria while designing and making.</p> <p>Use criteria to evaluate product begin to explain how I could improve original design.</p> <p>Evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose discuss by whom, when and where products were designed.</p> <p>Research whether products can be recycled or reused.</p> <p>Know about some inventors/designers/ engineers/chefs/man ufacturers of ground-</p>	<p>Evaluate quality of design while designing and making.</p> <p>Evaluate ideas and finished product against specification, considering purpose and appearance.</p> <p>Test and evaluate final product.</p> <p>Evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose.</p> <p>Begin to evaluate how much products cost to make and how</p>	<p>Evaluate quality of design while designing and making; is it fit for purpose?</p> <p>Keep checking design is best it can be.</p> <p>Evaluate ideas and finished product against specification, stating if it's fit for purpose.</p> <p>Test and evaluate final product.</p> <p>Explain what would improve it and the effect different resources may have had.</p> <p>Do thorough evaluations of existing products considering: how well they've been</p>

	<p>Show an interest in technological toys.</p> <p>Describe textures.</p>			/engineers/chefs/manufacturers of ground-breaking products.	breaking products.	<p>innovative they are.</p> <p>Research how sustainable materials are.</p> <p>Talk about some key inventors/designers/engineers/ chefs/manufacturers of ground-breaking products.</p>	<p>made, materials, whether they work, how they've been made, fit for purpose.</p> <p>Evaluate how much products cost to make and how innovative they are.</p> <p>Research and discuss how sustainable materials are.</p> <p>Consider the impact of products beyond their intended purpose.</p> <p>Discuss some key inventors/designers/engineers/ chefs /manufacturers of ground-breaking products.</p>
<b>Evaluate specific vocabulary</b>	Change, Like, Dislike, Next time, Better, Worse, Different Instead	Improve, Unsuccessful, Future, Change, Finished article, Evaluate	Prefer, Useful, Progress, Modify, Alter, Adapt, Original, Graphics	Assess, Edit, Improve, Analyse, Design criteria,	Alter, Develop, Test, Effective	Alternatives, Quality Machine made, Outcome, Function	Functionality, Fit for purpose, Models

Disciplinary knowledge is the process of enabling children to use their substantive knowledge of products and materials around them to make links between and across different areas of the curriculum. Knowledge in design and technology will equip the children with the opportunity to explain how and why products have changed over time and how they might be further improved in the future. They can use their knowledge and understanding to suggest how existing products may be improved with the advances in modern technology. They will show they have the cultural capital to become global citizens in an ever-changing and technologically advancing world.

Strand	Reception	KS1	LKS2	UKS2
Mechanisms	<ul style="list-style-type: none"> <li>Make moving vehicles using construction kits</li> </ul>	<ul style="list-style-type: none"> <li>Design products that have a clear purpose and an intended user</li> <li>Explore objects and designs</li> <li>Explore how products have been created and suggest improvements to existing designs</li> <li>Experiment using levers or slides</li> <li>Begin to understand how to use wheels and axles</li> <li>Attach wheels to a chassis using an axel e.g. dowel and cotton reels</li> <li>Make vehicles with construction kits which contain free running wheels e.g. Nuts and Bolts, Meccano, Lego</li> </ul>	<ul style="list-style-type: none"> <li>Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product e.g. levers, winding mechanisms, pulleys or gears</li> <li>Select most appropriate tools / techniques.</li> <li>Explain alterations to a product after checking it.</li> <li>Grow in confidence about trying new / different ideas.</li> </ul>	<ul style="list-style-type: none"> <li>Use cams, pulleys and gears to create movement</li> <li>Use innovative combinations of electronics (or computing) and mechanics in product designs</li> <li>Refine product after testing, considering aesthetics, functionality and purpose.</li> </ul>
Electrical Systems			<ul style="list-style-type: none"> <li>Make and represent simple electrical circuits e.g.. series or parallel</li> <li>Use a component in a circuit e.g. buzzer, bulb</li> </ul>	<ul style="list-style-type: none"> <li>Confidently use number of components in circuit. e.g. LEDs, resistors, transistors and chips</li> </ul>
Computing			<ul style="list-style-type: none"> <li>Program a computer to control product e.g. micro:bits</li> <li>Use software to design and represent product designs</li> </ul>	<ul style="list-style-type: none"> <li>Program a computer to control and monitor models or products</li> </ul>
Structures	<ul style="list-style-type: none"> <li>Create structures using a</li> </ul>	<ul style="list-style-type: none"> <li>Measure carefully to the</li> </ul>	<ul style="list-style-type: none"> <li>Choose suitable techniques to</li> </ul>	<ul style="list-style-type: none"> <li>Select materials carefully,</li> </ul>

	range of found and kit based materials	<p>nearest cm</p> <ul style="list-style-type: none"> <li>Describe some different characteristics of materials e.g. flexible, strong.</li> <li>Demonstrate a range of cutting and shaping techniques e.g. tearing, cutting, folding and curling</li> <li>Join materials in different ways e.g. glue, tap, split pins, staples</li> <li>Use joining, rolling or folding to make materials stronger</li> </ul>	<p>construct products</p> <ul style="list-style-type: none"> <li>Select appropriate joining techniques</li> <li>Measure and mark out to the nearest millimetre.</li> <li>Cut materials accurately and safely by selecting appropriate tools</li> <li>Strengthen materials using suitable techniques</li> </ul>	<p>considering intended use of product, the aesthetics and functionality.</p> <ul style="list-style-type: none"> <li>Cut materials with precision and refine the finish with appropriate tools e.g. sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape</li> <li>Develop a range of practical skills to create products e.g. cutting, drilling and screwing, nailing, gluing, filing and sanding</li> <li>Show an understanding of the qualities of materials to choose appropriate tools to cut and shape e.g. the nature of fabric may require sharper scissors than would be used to cut paper</li> </ul>
Textiles	<ul style="list-style-type: none"> <li>Explorer fabrics to create new products e.g. capes, dresses</li> <li>Weave with a range of different fabrics</li> </ul>	<ul style="list-style-type: none"> <li>Shape textiles using templates</li> <li>Join fabrics using a running stitch</li> <li>Colour fabrics using a range of techniques e.g. fabric paints, printing and painting.</li> <li>Decorate fabrics with range of resources e.g. buttons, beads, sequins, ribbons.</li> </ul>	<ul style="list-style-type: none"> <li>Create a simple pattern.</li> <li>Join fabrics using appropriate stitching e.g. back stitch, overcast stitch, hemming stitch, cross stitch.</li> <li>Explore fastenings and recreate some e.g. sew on buttons and make loops.</li> <li>Use appropriate decoration techniques e.g. glue. applique or simple stitches.</li> </ul>	<ul style="list-style-type: none"> <li>Create products using pattern pieces and employ seam allowance.</li> <li>Understand pattern layout. • Pin and tack fabric pieces together.</li> <li>Join textiles with a combination of stitching techniques e.g. back stitch for seams and running stitch to attach</li> </ul>

				decoration (blanket stitch, invisible stitch) <ul style="list-style-type: none"> <li>Decorate textiles appropriately</li> </ul>
Cooking and Nutrition: Healthy Diet	<ul style="list-style-type: none"> <li>Begin to understand that eating well contributes to good health.</li> <li>Understand need for variety in food.</li> </ul>	<ul style="list-style-type: none"> <li>Name the 5 food groups e.g. draw the 'Eat Well' plate</li> <li>Know what is meant by '5 a day'</li> <li>Begin to understand the need for a balanced diet.</li> </ul>	<ul style="list-style-type: none"> <li>Describe 'Eat Well' plate and how a healthy diet = variety / balance of food and drinks.</li> </ul>	<ul style="list-style-type: none"> <li>Describe some of the different substances in food and drink,</li> </ul>
Cooking and Nutrition: Cooking	<ul style="list-style-type: none"> <li>Discuss importance of handwashing</li> <li>Experience a wide range of foods and begin to develop food vocabulary</li> <li>Practise stirring, mixing, pouring, blending.</li> </ul>	<ul style="list-style-type: none"> <li>Explain hygiene when cooking e.g. Washing hands &amp; cleaning surfaces</li> <li>Measure and weigh food using non-standard measures</li> <li>Cut, peel and grate ingredients</li> <li>Follow a simple recipe</li> </ul>	<ul style="list-style-type: none"> <li>Explain how to be safe/hygienic when preparing food.</li> <li>Prepare and cook some dishes safely and hygienically.</li> <li>Understand ingredients can be fresh, pre-cooked or processed.</li> <li>Measure ingredients accurately to the nearest gram</li> <li>Use some of the following techniques: peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</li> </ul>	<ul style="list-style-type: none"> <li>Explain how to be safe / hygienic and follow own guidelines.</li> <li>Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms)</li> <li>Measure accurately and calculate ratios of ingredients to scale up or down from a recipe</li> <li>Demonstrate a range of baking and cooking techniques</li> <li>Create and refine recipes, including ingredients, methods, cooking times and temperatures</li> </ul>
Cooking and Nutrition: Where Food Comes	<ul style="list-style-type: none"> <li>Food can be grown</li> </ul>	<ul style="list-style-type: none"> <li>Describe how food is farmed, homegrown, caught.</li> <li>Say where food comes from e.g. animal, plant</li> </ul>	<ul style="list-style-type: none"> <li>Understand that food can be grown, reared or caught in the UK or wider world.</li> </ul>	<ul style="list-style-type: none"> <li>Name some types of food that are grown, reared or caught in the UK or wider world.</li> </ul>

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## Disciplinary Knowledge Progression of Vocabulary

EYFS - Reception	Key Stage 1 (Year 1 & Year 2)
Technical knowledge: bumpy smooth shiny rough hard smooth  Cooking and Nutrition: fruit and vegetables healthy/unhealthy eat different food	Technical knowledge: stable stronger stiffer lever slider wheel axel mechanism  Cooking and Nutrition: portion fruit and vegetables proteins- beans, pulses, fish, eggs, meat dairy/alternatives- cheese, milk, yoghurt carbohydrates- potatoes, bread, rice, pasta hygiene peeling grating cutting healthy/unhealthy farming fishing plants animals
Lower Key Stage 2 (Year 3 & Year 4)	Upper Key Stage 2 (Year 5 & Year 6)
Technical knowledge: lever systems structure pulleys shell join gears monitor adapt strong stiff reinforce levers linkages pneumatic systems movement force pulleys cam circuit component series parallel switches clips bulbs buzzers motors wires lights complete circuit program computer control debug sequence instructions algorithms  Cooking and Nutrition: processed peel chop slice grate mix fresh spread knead bake healthy diet varied organic savoury sweet recipe appearance peeling chopping grating mixing spreading kneading baking prepare temperature taste texture hygiene safety measure gram kilogram heat/hot oven hob cook utensils grown reared caught fishing seasonal ingredients	Technical knowledge: pneumatic substituting strengthen stiffen reinforce 3D framework cams linkages forces mechanical cams pulleys gears movement linkages forces complex electrical circuits components functional bulbs buzzers motors series parallel switches crocodile clips wires lights complete circuit fault program computer control debug changes sequence instructions algorithms monitor effect  Cooking and Nutrition: aroma substance nutrients substitute adapting methods cooking time temperature storage handling recipe prepare cook savoury peeling chopping slicing grating mixing blending kneading baking melting whisking proving rise dissolving juicing seasonal growing reared fishing dietary requirements vegetarian vegan caught ethical kosher gluten-free

## Long Term Planning

### EYFS/KS1 3-year cycle

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
A 2022 - 2023		Textiles - Puppets		Cooking - Dips and Dippers		Mechanical - Moving Pictures
B 2023 - 2024	Textiles - Our Fabric Faces			Mechanical - Playgrounds Wacky Windmills		Mechanical - Flying Kites
C 2024 - 2025		Mechanical - Moving toys/vehicles		Cooking - Sensational Salads		Textiles - Fabric Bunting

### KS2 4-year cycle

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
A 2022 - 2023		Cooking – Global Foods		Electrical – Light-up Signs		Structures - Bridges
B 2023 - 2024		Mechanical – Mechanical Posters		Textiles – Felt Phone Cases		Computing – Programming Adventures
C 2024 - 2025		Structures – Bird Houses		Electrical - Fairgrounds		Cooking - Edible Garden
D 2025 -2026		Mechanical – Automata Animals		Textiles – Juggling Balls		Computing - Programming Pioneers