



## Design and Technology Curriculum Map

The TES Projects on a Page Scheme of Work is used to support our planning and teaching of Design and Technology at Cuffley School.

### The National Curriculum aims for Key Stage 1 and Key Stage 2 are:

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

### Nursery

#### Curriculum content (Development Matters):

##### Expressive Arts and Design

- Make imaginative and complex 'small worlds' with blocks and construction kits, such as a city with different buildings and a park.
- Explore different materials freely, in order to develop their ideas about how to use them and what to make.
- Develop their own ideas and then decide which materials to use to express them.
- Join different materials and explore different textures.

##### The following areas of learning are interlinked with the DT curriculum;

##### Communication and Language

- Use a wider range of vocabulary.
- Understand 'why' questions, like: "Why do you think the caterpillar got so fat?"
- Use longer sentences of four to six words.
- Use talk to organise themselves and their play: "Let's go on a bus... you sit there... I'll be the driver."

##### Personal, Social and Emotional Development

- Select and use activities and resources, with help when needed. This helps them to achieve a goal they have chosen, or one which is suggested to them.
- Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel.

##### Physical Development

- Choose the right resources to carry out their own plan. For example, choosing a spade to enlarge a small hole they dug with a trowel.
- Use one-handed tools and equipment, for example, making snips in paper with scissors.

- Show a preference for a dominant hand.
- Make healthy choices about food, drink, activity and tooth brushing.

### Understanding of the World

- Explore how things work.

In nursery children should be exposed and encouraged to explore D&T materials and resources. Open-ended play should be provided throughout the year so that children are able to explore materials, tools and construction kits such as Mobilo, Duplo, Wooden Bricks (small and large) and natural materials. The role of the adult is to provide, encourage, model and support children through their explorations.

Autumn	Spring	Summer
<p>Autumn 1: Me, Me, Me! Autumn 2: Celebration and Colour</p> <p><b>Cutting skills</b> – Master how to open and close scissors. Begin to snip the edges of firm paper and other items e.g. straws, playdough etc. Paper may held by an adult at this stage. (Alternative scissors can be used e.g. spring loaded, double ended).</p> <p><b>Investigate, Play and Explore with Materials &amp; Resources</b></p> <ul style="list-style-type: none"> <li>• Investigate treasure baskets and collections of natural and manufactured resources.</li> <li>• Play with everyday objects such as empty boxes. blocks and construction kits e.g. Duplo, Large K’Nex, wooden bricks, Mobilo, Popoids (on a small and large scale)</li> <li>• Explore and experiment with tools such as scissors, hammers (pin a shape), hole punches.</li> </ul>	<p>Spring 1: Once Upon a Time Spring 2: Amazing Animals</p> <p><b>Cutting skills</b> – Begin to develop correct scissor hold and the use of a dominant hand. Begin to use non-cutting hand to hold paper and cut with a forward motion along a piece of paper that has no line. (Adaptations – use thin strips of card/paper, needing only 2 snips before reaching end, increase distance as confidence and skill develops, firmer paper is easier to cut)</p> <p><b>Investigate, Play and Explore with Materials &amp; Resources</b></p> <ul style="list-style-type: none"> <li>• Explore how to fold, cut and decorate paper and card.</li> <li>• Begin to explore how to fix and join materials using resources such as sellotape, masking tape, Pritt Stick, PVA Glue.</li> <li>• Explore objects that move e.g. cars, balls and guttering, books with levers and sliders.</li> </ul>	<p>Summer 1: Growing and Moving Summer 2: Land Ahoy</p> <p><b>Cutting skills</b> – Continue to develop correct scissor hold. Use non-cutting hand to hold paper. Cut along a straight thick line. Begins to cut gentle thick curves. (Adaptations – thicker/firmer paper is easier to cut, thicker lines are easier to cut, decrease thickness of line as accuracy develops.)</p> <p><b>Investigate, Play and Explore with Materials &amp; Resources</b></p> <ul style="list-style-type: none"> <li>• Begin to create items which represent other objects e.g. a box covered in glue with scraps of paper, paint and fabric stuck to it could represent a house, car or a trap for monsters.</li> <li>• Become more proficient in fixing and joining materials with resources available.</li> <li>• Use large construction resources (e.g. wooden bricks) to represent another object e.g. house, bus, train etc.</li> </ul>

	<ul style="list-style-type: none"> <li>Explore how to use materials and resources such as sellotape, masking tape, Pritt Stick and PVA Glue.</li> </ul> <p><b>Food</b></p> <ul style="list-style-type: none"> <li>Taste different types of fruit and vegetables – explore different textures and tastes.</li> <li>Know that tools are not toys and should be treated with care.</li> <li>Use plastic knives to cut playdough.</li> <li>Begin to hold a knife correctly. Using child safe knives and with supervision, begin to cut soft fruits such as bananas.</li> <li>Begin to use knives to spread e.g. butter/jam on toast.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>Continue to taste a range of different fruits and vegetables and know the names of them.</li> <li>Develop knife hold and demonstrate an understanding of safety. Develop cutting skills to include other soft fruits.</li> <li>Develop skills when peeling oranges and bananas.</li> <li>Take part in cookery activities – stirring, mixing, using cutters for biscuits etc.</li> </ul>	<p><b>Food</b></p> <ul style="list-style-type: none"> <li>Show confidence when holding a knife correctly and cutting soft fruits. Begin to use a sawing motion to cut harder fruits such as apples.</li> <li>Continue to take part in cookery activities – measuring, stirring, mixing, cutting, skewering.</li> </ul>
<b>Assessment:</b>	Development Matters	Development Matters	Development Matters

<b>Reception</b>	<p><b>Curriculum content (Development Matters [DM] &amp; Early Learning Goals [ELG]):</b></p> <p><b>Expressive Arts and Design</b></p> <ul style="list-style-type: none"> <li>Return to and build on their previous learning, refining ideas and developing their ability to represent them. (DM)</li> <li>Create collaboratively sharing ideas, resources and skills. (DM)</li> <li>Safely use and explore a variety of materials, tools and techniques, experimenting with design, texture, form and function. (ELG)</li> <li>Share their creations, explaining the process they have used. (ELG)</li> </ul> <p><b>The following areas of learning are interlinked with the DT curriculum;</b></p> <p><b>Communication and Language</b></p> <ul style="list-style-type: none"> <li>Learn new vocabulary. (DM)</li> <li>Articulate their ideas and thoughts in well-formed sentences. (DM)</li> <li>Use talk to help work out problems and organise thinking and activities explain how things work and why they might happen. (DM)</li> <li>Participate in small group, class and one-to-one discussions, offering their own ideas, using recently introduced vocabulary. (ELG)</li> <li>Offer explanations for why things might happen, making use of recently introduced vocabulary. (ELG)</li> </ul> <p><b>Personal, Social and Emotional Development</b></p> <ul style="list-style-type: none"> <li>Show resilience and perseverance in the face of challenge. (DM)</li> <li>Set and work towards simple goals. (ELG)</li> </ul>
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- Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. (ELG)
- Physical Development**
- Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons. (DM)
  - Use a range of small tools, including scissors, paintbrushes and cutlery. (ELG)
  - Begin to show accuracy and care when drawing. (ELG)

Autumn	Spring	Summer
<p>Autumn 1: Marvellous Me! Autumn 2: Celebrations</p> <p><b>Cutting skills</b> – Hold scissors correctly in preferred hand and begin to use non-cutting hand to manoeuvre the paper. Cut along straight and curved lines with improved accuracy. Cut a line to a point and stop. Begin to cut around corners using wide angles.</p> <p><b>Investigate, Explore &amp; Select</b></p> <ul style="list-style-type: none"> <li>• Continue to explore joining resources e.g. hole punches, hammers, glue (pritt stick &amp; PVA), sellotape, masking tape, wool and string.</li> <li>• Continue to explore using different types of media for construction e.g. paper, card, bags, cardboard boxes, plastic trays, foil, fabric etc. (Different thicknesses of materials can increase challenge.)</li> <li>• Continue to explore the use of sequins, glitter, buttons, pom-poms, wool, ribbon and stickers as embellishments for construction.</li> <li>• Continue to explore construction kits (lego, mobilio, knex, polydron etc) and use them to create models.</li> <li>• Continue to explore using large construction such as planks of wood,</li> </ul>	<p>Spring 1: Superhero Powers Spring 2: Once Upon a Classic Tale</p> <p><b>Cutting skills</b> – Develop use of non-cutting hand to manoeuvre paper. Begin to cut out simple shapes such as squares, rectangles, circles etc. Able to follow a thinner line when cutting with increased accuracy.</p> <p><b>Investigate, Explore &amp; Select</b></p> <ul style="list-style-type: none"> <li>• Develop knowledge of different types of joining resources, introducing new ideas e.g. treasury tags, ribbon, split pins, nuts and bolts, nails, pegs, elastic bands.</li> <li>• Begin to select the media needed based on purpose for its use.</li> <li>• Begin to select embellishments (see autumn term) for a purpose.</li> <li>• Begin to create objects for use in play e.g. a bag for the shops, a telescope to be a pirate, a house for small world toys.</li> <li>• Create objects for use in play using larger construction materials.</li> <li>• Explore using pulleys to move things along.</li> <li>• Explore levers and sliders in moving books.</li> </ul> <p><b>Food</b></p>	<p>Summer 1: Globe Trekkers Summer 2: Eco Warriors</p> <p><b>Cutting skills</b> – Begin to cut along more difficult lines such as zig-zags. Begin to cut out more complex shapes such as stars and figures. Extend – Cut out a hole from the middle of paper.</p> <p><b>Investigate, Explore &amp; Select</b></p> <ul style="list-style-type: none"> <li>• Begin to specifically choose how to join materials together using their experience of joining resources based on the purpose of creation e.g. hole punch and ribbon to hang an ornament, rolling and sticking paper with sellotape to create a telescope when no cardboard tubes can be found.</li> <li>• Be selective in choice and amount of embellishments to a design.</li> <li>• Begin to plan ideas on paper, using drawings and labels before making.</li> <li>• With support, explore creating a simple up and down or side-to-side slider e.g. in a card, for a story etc.</li> </ul> <p><b>Food</b></p> <ul style="list-style-type: none"> <li>• Continue to take part in simple cookery activities ensuring a range of foodstuffs has been experienced e.g. pizza, bread, biscuits, cakes, sandwiches etc.</li> </ul>

	<p>large wooden bricks, tyres, den building poles, fabric, canes, crates, pegs, ropes, reels, bricks.</p> <p><b>Food</b></p> <ul style="list-style-type: none"> <li>Continue to take part in cookery activities – develop mixing, stirring, cutting skills.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to take part in simple cookery activities ensuring a range of foodstuffs has been experienced e.g. pizza, bread, biscuits, cakes, sandwiches etc.</li> <li>Continue to develop mixing, stirring, cutting and simple measuring skills.</li> <li>Begin to understand the difference between healthy and not healthy foods.</li> </ul>	<ul style="list-style-type: none"> <li>Continue to develop mixing, stirring, cutting and simple measuring skills.</li> <li>Develop understanding of eating healthy and be able to name healthy and unhealthy foods.</li> </ul>
<b>Assessment:</b>	Development Matters	Development Matters	Early Learning Goals

<b>Key Stage 1</b>	<p><b>Curriculum content (National Curriculum):</b> Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment. When designing and making, pupils should be taught to:</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 (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><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 (for example, levers, sliders, wheels and axles), in their products.</li> </ul> <p>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.</p>
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	Pupils should be taught to: <b>Cooking and Nutrition</b> <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>Year 1</b>	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
	<b>Structures – Free Standing (3 Bears)</b> <b>Designing</b> <ul style="list-style-type: none"> <li>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>• Develop, model and communicate their ideas through talking, mock-ups and drawings.</li> </ul> <b>Making</b> <ul style="list-style-type: none"> <li>• Plan by suggesting what to do next.</li> <li>• Select and use tools (e.g. scissors), skills and techniques suitable for the task, explaining their choices.</li> <li>• Select new and reclaimed materials (e.g. card/paper) and construction kits (e.g. Lego, wooden blocks) to build their structures.</li> <li>• Use simple finishing techniques (e.g. Sellotape, masking tape) suitable for the structure they are creating.</li> </ul> <b>Evaluating</b> <ul style="list-style-type: none"> <li>• Explore a range of existing freestanding structures in the school and local environment e.g. everyday products (tables) and buildings.</li> </ul>	<b>Food – Preparing Fruit and Vegetables (Kebabs &amp; Sandwiches)</b> <b>Designing</b> <ul style="list-style-type: none"> <li>• Design appealing products for a particular user based on simple design criteria.</li> <li>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li>• Communicate these ideas through talk and drawings.</li> </ul> <b>Making</b> <ul style="list-style-type: none"> <li>• Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li> <li>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li> </ul> <b>Evaluating</b> <ul style="list-style-type: none"> <li>• Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> <li>• Evaluate ideas and finished products against design criteria,</li> </ul>	<b>Mechanisms – Wheels &amp; Axels</b> <b>Designing</b> <ul style="list-style-type: none"> <li>• Generate initial ideas and simple design criteria through talking and using own experiences.</li> <li>• Develop and communicate ideas through drawings and mock-ups.</li> </ul> <b>Making</b> <ul style="list-style-type: none"> <li>• Select from and use a range of tools and equipment to perform practical tasks such as cutting and joining to allow movement and finishing.</li> <li>• Select from and use a range of materials and components such as paper, card, plastic and wood according to what properties are needed.</li> </ul> <b>Evaluating</b> <ul style="list-style-type: none"> <li>• Explore and evaluate a range of products with wheels and axles.</li> <li>• Evaluate their ideas throughout and their products against original criteria.</li> </ul> <b>Technical knowledge and understanding</b>

	<ul style="list-style-type: none"> <li>Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Know how to make freestanding structures stronger (e.g. way bricks are laid), stiffer (re-enforcement by double layering) and more stable.</li> <li>Use their basic understanding of 2-D and 3-D shapes in mathematics and the physical properties and everyday uses of materials in science.</li> </ul>	<p>including intended user and purpose.</p> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</li> <li>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of <i>The 'Eatwell' plate</i>.</li> <li>Know and use technical and sensory vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Explore and use wheels, axles and axle holders.</li> <li>Distinguish between fixed and freely moving axles.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>
<b>Assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>
<b>Year 2</b>	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
	<p><b>Mechanisms – Sliders &amp; Levers Designing</b></p> <ul style="list-style-type: none"> <li>Generate ideas based on simple design criteria and their own experiences, explaining what they could make.</li> <li>Develop, model and communicate their ideas through drawings and mock-ups with card and paper.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Plan by suggesting what to do next.</li> <li>Select and use tools suitable for the task, explaining their choices, to cut, shape and join paper and card.</li> </ul>	<p><b>Textiles – Templates &amp; Joining Designing</b></p> <ul style="list-style-type: none"> <li>Design a functional and appealing product for a chosen user and purpose based on simple design criteria.</li> <li>Generate, develop, model and communicate their ideas as appropriate through talking, drawing, templates, mock-ups and computing programmes.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Select from and use a range of tools and equipment to perform practical</li> </ul>	<p><b>Food – Preparing Fruit &amp; Vegetables Designing</b></p> <ul style="list-style-type: none"> <li>Design appealing products for a particular user based on simple design criteria.</li> <li>Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.</li> <li>Communicate these ideas through talk and drawings.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.</li> </ul>

	<ul style="list-style-type: none"> <li>Use simple finishing techniques suitable for the product they are creating.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Explore a range of existing books and everyday products that use simple sliders and levers.</li> <li>Evaluate their product by discussing how well it works in relation to the purpose and the user.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Explore and use sliders and levers.</li> <li>Understand that different mechanisms produce different types of movement.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>	<p>tasks such as marking out, cutting, joining and finishing.</p> <ul style="list-style-type: none"> <li>Select from and use textiles according to their characteristics (feel and look).</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Explore and evaluate a range of existing textile products relevant to the project being undertaken.</li> <li>Evaluate their ideas throughout and their final products against original design criteria.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand how simple 3-D textile products are made, using a template to create two identical shapes.</li> <li>Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.</li> <li>Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>	<ul style="list-style-type: none"> <li>Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.</li> <li>Evaluate ideas and finished products against design criteria, including intended user and purpose.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.</li> <li>Understand and use basic principles of a healthy and varied diet to prepare dishes, including how fruit and vegetables are part of The 'Eatwell' plate.</li> <li>Know and use technical and sensory vocabulary relevant to the project.</li> </ul>
<b>Assessment:</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>

<b>Key Stage 2</b>	<p><b>Curriculum content (National Curriculum):</b> Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].</p> <p>When designing and making, pupils should be taught to:</p> <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 [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><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>Technical 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 [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>As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.</p> <p>Pupils should be taught to:</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></ul>
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	<ul style="list-style-type: none"> <li>understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</li> </ul>		
<b>Year 3</b>	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
	<p><b>Mechanisms – levers &amp; linkages</b></p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generating realistic ideas and their own design criteria through discussion, focusing on the needs of the user.</li> <li>Investigating and analysing books and, where available, other products with lever and linkage mechanisms.</li> <li>Use annotated sketches and prototypes to develop, model and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Understand and use lever and linkage mechanisms.</li> <li>Distinguish between fixed and loose pivots.</li> <li>Using the relevant cutting, marking, shaping, and joining techniques.</li> <li>Selecting from and use finishing techniques suitable for the product they are creating.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Evaluate their own products and ideas against criteria and user needs, throughout the design and making process.</li> </ul>	<p><b>Structures – shell structure</b></p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generating realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and purpose of the product.</li> <li>Investigate and evaluate a range of existing shell structures including the materials, components and techniques that have been used.</li> <li>Develop ideas through the analysis of existing products and use annotated sketches and prototypes to model and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Developing and using knowledge of how to construct strong, stiff shell structures.</li> <li>Developing and using knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li> <li>Explaining their choice of materials according to functional properties and aesthetic qualities.</li> <li>Using finishing techniques suitable for the product they are creating.</li> </ul> <p><b>Evaluating</b></p>	<p><b>Food – healthy &amp; varied diet</b></p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.</li> <li>Carry out sensory evaluations of a variety of ingredients and products.</li> <li>Record the evaluations using tables and simple graphs.</li> <li>Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Know how to use appropriate equipment and utensils to prepare and combine food. E.g. build on KS1 knowledge of using grater, peeler, etc.</li> <li>Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul>

	<p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand and use lever and linkage mechanisms.</li> <li>Distinguish between fixed and loose pivots.</li> </ul>	<ul style="list-style-type: none"> <li>Test and evaluate their own products against the design criteria and the intended user and purpose.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Develop and use knowledge of how to construct strong, stiff shell structures.</li> <li>Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.</li> </ul>	<p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Know how to use appropriate equipment and utensils to prepare and combine food.</li> <li>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.</li> </ul>
<b>Assessment:</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>
<b>Year 4</b>	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
	<p><b>Food – healthy &amp; varied diet</b> <b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate and clarify ideas through discussion with peers and adults to develop design criteria including appearance, taste, texture and aroma for an appealing product for a particular user and purpose.</li> <li>Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using tables and simple graphs.</li> <li>Use annotated sketches and appropriate information and communication technology, such as</li> </ul>	<p><b>Textiles – 2D shape to 3D product</b> <b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.</li> <li>Investigate a range of 3-D textile products relevant to the project.</li> <li>Produce annotated sketches, prototypes, final product sketches and pattern pieces.</li> <li>Understand how a key event/individual has influenced the development of the chosen product and/ or fabric.</li> </ul>	<p><b>Electrical Systems – simple circuits &amp; switches</b> <b>Designing</b></p> <ul style="list-style-type: none"> <li>Gather information about needs and wants, and develop design criteria to inform the design of products that are fit for purpose, aimed at particular individuals or groups.</li> <li>Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.</li> </ul> <p><b>Making</b></p>

	<p>web-based recipes, to develop and communicate ideas.</p> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Plan the main stages of a recipe, listing ingredients, utensils and equipment.</li> <li>Select and use appropriate utensils and equipment to prepare and combine ingredients.</li> <li>Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Evaluate the ongoing work and the final product with reference to the design criteria and the views of others.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Know how to use appropriate equipment and utensils to prepare and combine food.</li> <li>Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught</li> </ul>	<p><b>Making</b></p> <ul style="list-style-type: none"> <li>Plan the main stages of making.</li> <li>Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.</li> <li>Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Test their product against the original design criteria and with the intended user.</li> <li>Take into account others' views.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Know how to strengthen, stiffen and reinforce existing fabrics.</li> <li>Understand how to securely join two pieces of fabric together.</li> <li>Understand the need for patterns and seam allowances.</li> </ul>	<ul style="list-style-type: none"> <li>Order the main stages of making.</li> <li>Select from and use tools and equipment to cut, shape, join and finish with some accuracy.</li> <li>Select from and use materials and components, including construction materials and electrical components according to their functional properties and aesthetic qualities.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Investigate and analyse a range of existing battery-powered products.</li> <li>Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand and use electrical systems in their products, such as series circuits incorporating switches, bulbs and buzzers. Apply their understanding of computing to program and control their products.</li> <li>Know and use technical vocabulary relevant to the project.</li> </ul>
<b>Assessment:</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>
<b>Year 5</b>	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>

	<p><b>Structures – frame structures</b> <b>Designing</b></p> <ul style="list-style-type: none"> <li>• Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.</li> <li>• Investigate and evaluate a range of existing frame structures.</li> <li>• Research key events and individuals relevant to frame structures.</li> <li>• Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.</li> <li>• Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.</li> <li>• Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks.</li> <li>• Use finishing and decorative techniques suitable for the product they are designing and making.</li> </ul>	<p><b>Electrical Systems – complex switches</b> <b>Designing</b></p> <ul style="list-style-type: none"> <li>• Use research to develop a design specification for a functional product that responds automatically to changes in the environment. Take account of constraints including time, resources and cost.</li> <li>• Investigate famous inventors who developed ground-breaking electrical systems and components.</li> <li>• Generate and develop innovative ideas and share and clarify these through discussion.</li> <li>• Communicate ideas through annotated sketches and pictorial representations of electrical circuits or circuit diagrams.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.</li> <li>• Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.</li> <li>• Create and modify a computer control program to enable an electrical product to work automatically in response to changes in the environment.</li> </ul>	<p><b>Food – celebrating culture &amp; seasonality</b> <b>Designing</b></p> <ul style="list-style-type: none"> <li>• Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li>• Understand how key chefs have influenced eating habits to promote varied and healthy diets (e.g. Jamie Oliver and healthy school meals).</li> <li>• Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.</li> <li>• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>• Write a step-by-step recipe, including a list of</li> <li>• ingredients, equipment and utensils</li> <li>• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li>• Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul> <p><b>Evaluating</b></p>
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	<p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand how to strengthen, stiffen and reinforce 3-D frameworks.</li> </ul>	<p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Continually evaluate and modify the working features of the product to match the initial design specification.</li> <li>Test the system to demonstrate its effectiveness for the intended user and purpose.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand and use appropriate electrical systems in their products.</li> <li>Apply their understanding of computing to program, monitor and control their products.</li> </ul>	<ul style="list-style-type: none"> <li>Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using tables/ graphs/ charts such as star diagrams.</li> <li>Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>utensils and equipment including heat sources to prepare and cook food.</li> <li>Understand about seasonality in relation to food products and the source of different food products.</li> </ul>
<b>Assessment:</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>
<b>Year 6</b>	<b>Autumn</b>	<b>Spring</b>	<b>Summer</b>
	<p><b>Textiles – combining different fabric shapes</b></p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.</li> <li>Investigate and analyse textile products linked to their final product.</li> <li>Develop, model and communicate ideas through talking, drawing, templates, mock-ups and</li> </ul>	<p><b>Food – celebrating culture &amp; seasonality</b></p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.</li> <li>Understand how key chefs have influenced eating habits to promote varied and healthy diets (e.g. Jamie Oliver and healthy school meals).</li> </ul>	<p><b>Mechanisms – pulleys and gears</b></p> <p><b>Designing</b></p> <ul style="list-style-type: none"> <li>Generate innovative ideas by carrying out</li> <li>research using surveys, interviews, questionnaires and web-based resources.</li> <li>Investigate famous manufacturing and engineering companies relevant to the project.</li> <li>Develop a simple design specification to guide their thinking.</li> </ul>

	<p>prototypes and, where appropriate, computer aided design.</p> <ul style="list-style-type: none"> <li>Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Produce detailed lists of equipment and fabrics relevant to their tasks.</li> <li>Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>Select from and use a range of tools and equipment to make products that are accurately assembled and well finished.</li> <li>Work within the constraints of time, resources and cost.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Compare the final product to the original design specification.</li> <li>Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>Consider the views of others to improve their work.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>A 3-D textile product can be made from a combination of accurately</li> </ul>	<ul style="list-style-type: none"> <li>Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.</li> <li>Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Write a step-by-step recipe, including a list of</li> <li>ingredients, equipment and utensils</li> <li>Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.</li> <li>Make, decorate and present the food product appropriately for the intended user and purpose.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using tables/ graphs/ charts such as star diagrams.</li> <li>Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.</li> </ul>	<ul style="list-style-type: none"> <li>Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.</li> </ul> <p><b>Making</b></p> <ul style="list-style-type: none"> <li>Produce a detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.</li> <li>Select from and use a range of tools and equipment (including electrical equipment) to make products that that are accurately assembled and well finished.</li> <li>Work within the constraints of time, resources and cost.</li> </ul> <p><b>Evaluating</b></p> <ul style="list-style-type: none"> <li>Compare the final product to the original design specification.</li> <li>Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.</li> <li>Consider the views of others to improve their work.</li> </ul> <p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Understand that mechanical and electrical systems have an input, process and an output.</li> </ul>
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	<p>made pattern pieces, fabric shapes and different fabrics.</p> <ul style="list-style-type: none"> <li>Fabrics can be strengthened, stiffened and reinforced where appropriate.</li> </ul>	<p><b>Technical knowledge and understanding</b></p> <ul style="list-style-type: none"> <li>Know how to use utensils and equipment including heat sources to prepare and cook food.</li> <li>Understand about seasonality in relation to food products and the source of different food products.</li> </ul>	<ul style="list-style-type: none"> <li>Understand how gears and pulleys can be used to speed up, slow down or change the direction of movement.</li> <li>A product that is reinforced and stiffened with a range of materials.</li> </ul>
<b>Assessment:</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>	<b>End of unit assessment</b>