

	Design	Make	Evaluate	Technical Knowledge	Cooking & Nutrition
<b>NC Obj</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]. When designing and making, pupils should be taught to:				
<b>NC Obj</b>	Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic Qualities	Investigate and analyse a range of existing products  Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work  Understand how key events and individuals in design and technology have helped shape the world	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures  Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]  Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]  Apply their understanding of computing to program, monitor and control their products.	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.  Understand and apply the principles of a healthy and varied diet  Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques  Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.
<b>Skills</b>	<p><b><u>Understanding contexts, users and purposes</u></b></p> <p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</p> <ul style="list-style-type: none"> <li>describe the <i>purpose of their products</i></li> <li>indicate the design features of their products that will <i>appeal to intended users</i></li> <li>explain how particular parts of their products work</li> <li><i>gather information</i> about the needs and wants of particular individuals and groups</li> <li>develop their own design criteria</li> </ul> <p><b><u>Generating, developing, modelling and communicating ideas</u></b></p> <ul style="list-style-type: none"> <li>Share and clarify ideas through discussion</li> <li>Model their ideas using <i>prototypes and pattern pieces</i></li> <li>Use <i>annotated sketches, cross-sectional drawings and exploded diagrams</i> to develop and communicate their ideas</li> <li>generate realistic ideas, focusing on the needs of the user</li> </ul>	<p><b><u>Planning</u></b></p> <ul style="list-style-type: none"> <li>select tools and equipment suitable for the task (explain their choice of tools and equipment in relation to the skills and techniques they will be using)</li> <li>select materials and components suitable for the task (explain their choice of materials and components according to functional properties and aesthetic qualities)</li> <li>order the main stages of making</li> </ul> <p><b><u>Practical skills and techniques</u></b></p> <ul style="list-style-type: none"> <li>follow procedures for safety and hygiene</li> <li>use a wider range of materials and components including construction materials and kits, food ingredients, mechanical components</li> <li>measure, mark out, cut and shape materials and components with <i>some accuracy</i></li> <li>assemble, join and combine materials and components with <i>some accuracy</i></li> <li>apply a range of finishing techniques, including those from art and design, with <i>some accuracy</i></li> </ul>	<p><b><u>Own ideas and products</u></b></p> <ul style="list-style-type: none"> <li>identify the strengths and areas for development in their ideas and products</li> <li>consider the views of others, including intended users, to improve their work</li> </ul> <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>refer to their design criteria as they design and make</li> <li>use their design criteria to evaluate their completed products</li> </ul> <p><b><u>Existing products</u></b></p> <ul style="list-style-type: none"> <li>how well products have been designed</li> <li>how well products have been made</li> <li>why materials have been chosen</li> <li>what methods of construction have been used</li> <li>how well products work</li> <li>how well products achieve their purposes</li> <li>how well products meet user needs and wants</li> <li>who designed and made the products</li> <li>where/when products were designed and made</li> <li>whether products can be recycled or reused</li> </ul> <p><b><u>Key events and individuals</u></b></p> <p>Children should know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</p>	<p><b><u>Making products work</u></b></p> <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work</li> <li>how to use learning from mathematics to help design and make products that work</li> <li>that materials have both functional properties and aesthetic qualities</li> <li>that materials can be combined and mixed to create more useful characteristics</li> <li>the correct technical vocabulary for the projects they are undertaking</li> <li>how mechanical systems such as levers and linkages or pneumatic systems create movement</li> <li>how to make strong, stiff shell structures</li> </ul>	<p><b><u>Where food comes from</u></b></p> <p>That a recipe can be adapted a by adding or substituting one or more ingredients</p> <ul style="list-style-type: none"> <li>that 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</li> </ul> <p><b><u>Food preparation, cooking and nutrition</u></b></p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> <li>that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate</li> <li>that to be active and healthy, food and drink are needed to provide energy for the body</li> <li>that food ingredients can be fresh, pre-cooked and processed</li> </ul>

## Year 4

NC Strand	Design	Make	Evaluate	Technical Knowledge	Cooking & Nutrition
<b>NC Obj</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]. When designing and making, pupils should be taught to:				
<b>NC Obj</b>	<p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic Qualities</p>	<p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>	<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Apply their understanding of computing to program, monitor and control their products.</p>	<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>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>
<b>Skills</b>	<p><b><u>Understanding contexts, users and purposes</u></b></p> <p>Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</p> <ul style="list-style-type: none"> <li>describe the <i>purpose of their products</i></li> <li>indicate the design features of their products that will <i>appeal to intended users</i></li> <li>explain how particular parts of their products work</li> <li><i>gather information</i> about the needs and wants of particular individuals and groups</li> <li>develop their own design criteria</li> </ul> <p><b><u>Generating, developing, modelling and communicating ideas</u></b></p> <ul style="list-style-type: none"> <li>Share and clarify ideas through discussion</li> <li>Model their ideas using <i>prototypes and pattern pieces</i></li> <li>Use <i>annotated sketches, cross-sectional drawings and exploded diagrams</i> to develop and communicate their ideas</li> <li>Use computer-aided design to develop and communicate their ideas</li> <li>generate realistic ideas, focusing on the needs of the user make design decisions that take account of the availability of resources</li> </ul>	<p><b><u>Planning</u></b></p> <ul style="list-style-type: none"> <li>select tools and equipment suitable for the task (explain their choice of tools and equipment in relation to the skills and techniques they will be using)</li> <li>select materials and components suitable for the task (explain their choice of materials and components according to functional properties and aesthetic qualities)</li> <li>order the main stages of making</li> </ul> <p><b><u>Practical skills and techniques</u></b></p> <ul style="list-style-type: none"> <li>follow procedures for safety and hygiene</li> <li>use a wider range of materials and components including construction materials and kits, food ingredients, mechanical components and electrical components</li> <li>measure, mark out, cut and shape materials and components with <i>some accuracy</i></li> <li>assemble, join and combine materials and components with <i>some accuracy</i></li> <li>apply a range of finishing techniques, including those from art and design, with <i>some accuracy</i></li> </ul>	<p><b><u>Own ideas and products</u></b></p> <ul style="list-style-type: none"> <li>identify the strengths and areas for development in their ideas and products</li> <li>consider the views of others, including intended users, to improve their work</li> </ul> <p>In early KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>refer to their design criteria as they design and make</li> <li>use their design criteria to evaluate their completed products</li> </ul> <p><b><u>Existing products</u></b></p> <ul style="list-style-type: none"> <li>how well products have been designed</li> <li>how well products have been made</li> <li>why materials have been chosen</li> <li>what methods of construction have been used</li> <li>how well products work</li> <li>how well products achieve their purposes</li> <li>how well products meet user needs and wants</li> <li>who designed and made the products</li> <li>where products were designed and made</li> <li>when products were designed and made</li> <li>whether products can be recycled or reused</li> </ul> <p><b><u>Key events and individuals</u></b></p> <p>Children should know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</p>	<p><b><u>Making products work</u></b></p> <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work</li> <li>how to use learning from mathematics to help design and make products that work</li> <li>that materials have both functional properties and aesthetic qualities</li> <li>that materials can be combined and mixed to create more useful characteristics</li> <li>that mechanical and electrical systems have an input, process and output</li> <li>the correct technical vocabulary for the projects they are undertaking</li> <li>how simple electrical circuits and components can be used to create functional products</li> <li>how to make strong, stiff shell structures</li> <li>that a single fabric shape can be used to make a 3D textiles product</li> </ul>	<p><b><u>Where food comes from</u></b></p> <p>That a recipe can be adapted a by adding or substituting one or more ingredients</p> <ul style="list-style-type: none"> <li>that 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</li> </ul> <p><b><u>Food preparation, cooking and nutrition</u></b></p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> <li>that a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate</li> <li>that to be active and healthy, food and drink are needed to provide energy for the body</li> <li>that food ingredients can be fresh, pre-cooked and processed</li> </ul>

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<b>NC Obj</b>	<p>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</p> <p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design</p>	<p>Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately</p> <p>Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic Qualities</p>	<p>Investigate and analyse a range of existing products</p> <p>Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work</p> <p>Understand how key events and individuals in design and technology have helped shape the world</p>	<p>Apply their understanding of how to strengthen, stiffen and reinforce more complex structures</p> <p>Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]</p> <p>Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]</p> <p>Apply their understanding of computing to program, monitor and control their products.</p>	<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>Understand and apply the principles of a healthy and varied diet</p> <p>Prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques</p> <p>Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p>
<b>Skills</b>	<p><b><u>Understanding contexts, users and purposes</u></b></p> <ul style="list-style-type: none"> <li>work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>describe the <i>purpose of their products</i></li> <li>indicate the design features of their products that will <i>appeal to intended users</i></li> <li>explain how particular parts of their products work</li> <li>carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>identify the needs, wants, preferences and values of particular individuals and groups</li> <li>develop a <i>simple design specification to guide their thinking</i></li> </ul> <p><b><u>Generating, developing, modelling and communicating ideas</u></b></p> <ul style="list-style-type: none"> <li>share and clarify ideas through discussion</li> <li>model their ideas using <i>prototypes and pattern piece</i></li> <li>use <i>annotated sketches, cross-sectional drawings and exploded diagrams</i> to develop and communicate their ideas</li> <li>use computer-aided design to develop and communicate their ideas</li> <li>generate realistic ideas, focusing on the needs of the user</li> <li>make design decisions that take account of the availability of resources</li> </ul> <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>generate innovative ideas, drawing on research</li> <li>make design decisions, taking account of constraints such as time, resources and cost</li> </ul>	<p><b><u>Planning</u></b></p> <ul style="list-style-type: none"> <li>select tools and equipment suitable for the task</li> <li>explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>select materials and components suitable for the task</li> <li>explain their choice of materials and components according to functional properties and aesthetic qualities</li> <li>produce appropriate lists of tools, equipment and materials that they need</li> <li>formulate step-by-step plans as a guide to making</li> </ul> <p><b><u>Practical skills and techniques</u></b></p> <ul style="list-style-type: none"> <li>follow procedures for safety and hygiene</li> <li>use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> <li>accurately measure, mark out, cut and shape materials and components</li> <li>accurately assemble, join and combine materials and components</li> <li>accurately apply a range of finishing techniques, including those from art and design</li> <li>use techniques that involve a number of steps</li> <li>demonstrate resourcefulness when tackling practical problems</li> </ul>	<p><b><u>Own ideas and products</u></b></p> <ul style="list-style-type: none"> <li>identify the strengths and areas for development in their ideas and products</li> <li>consider the views of others, including intended users, to improve their work</li> <li>critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>evaluate their ideas and products against their original design specification</li> </ul> <p><b><u>Existing products</u></b></p> <ul style="list-style-type: none"> <li>how well products have been designed</li> <li>how well products have been made</li> <li>why materials have been chosen</li> <li>what methods of construction have been used</li> <li>how well products work</li> <li>how well products achieve their purposes</li> <li>how well products meet user needs and wants</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 their intended purpose</li> </ul> <p><b><u>Key events and individuals</u></b></p> <p>Children should know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</p>	<p><b><u>Making products work</u></b></p> <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work</li> <li>how to use learning from mathematics to help design and make products that work</li> <li>that materials have both functional properties and aesthetic qualities (that materials can be combined and mixed to create more useful characteristics)</li> <li>that mechanical and electrical systems have an input, process and output</li> <li>the correct technical vocabulary for the projects they are undertaking</li> <li>how mechanical systems such as cams or pulleys or gears create movement</li> <li>how more complex electrical circuits and components can be used to create functional products</li> <li>how to reinforce and strengthen a 3D framework</li> <li>that a 3D textiles product can be made from a combination of fabric shapes</li> <li>that a recipe can be adapted by adding or substituting one or more ingredients</li> </ul>	<p><b><u>Where food comes from</u></b></p> <ul style="list-style-type: none"> <li>that a recipe can be adapted a by adding or substituting one or more ingredients</li> <li>that 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</li> <li>that seasons may affect the food available</li> <li>how food is processed into ingredients that can be eaten or used in cooking</li> </ul> <p><b><u>Food preparation, cooking and nutrition</u></b></p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> <li>that recipes can be adapted to change the appearance, taste, texture and aroma</li> <li>that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</li> </ul>

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<b>Skills</b>	<p><b><u>Understanding contexts, users and purposes</u></b></p> <ul style="list-style-type: none"> <li>work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment</li> <li>describe the <i>purpose of their products</i></li> <li>indicate the design features of their products that will <i>appeal to intended users</i></li> <li>explain how particular parts of their products work</li> <li>carry out research, using surveys, interviews, questionnaires and web-based resources</li> <li>identify the needs, wants, preferences and values of particular individuals and groups</li> <li>develop a simple design specification to guide their thinking</li> </ul> <p><b><u>Generating, developing, modelling and communicating ideas</u></b></p> <ul style="list-style-type: none"> <li>share and clarify ideas through discussion</li> <li>model their ideas using <i>prototypes and pattern pieces</i></li> <li>use <i>annotated sketches, cross-sectional drawings and exploded diagrams</i> to develop and communicate their ideas</li> <li>use computer-aided design to develop and communicate their ideas</li> <li>generate realistic ideas, focusing on the needs of the user</li> <li>make design decisions that take account of the availability of resources</li> </ul> <p>In late KS2 pupils should also:</p> <ul style="list-style-type: none"> <li>generate innovative ideas, drawing on research</li> <li>make design decisions, taking account of constraints such as <i>time, resources and cost</i></li> </ul>	<p><b><u>Planning</u></b></p> <ul style="list-style-type: none"> <li>select tools and equipment suitable for the task</li> <li>explain their choice of tools and equipment in relation to the skills and techniques they will be using</li> <li>select materials and components suitable for the task</li> <li>explain their choice of materials and components according to functional properties and aesthetic qualities</li> <li>produce appropriate lists of tools, equipment and materials that they need</li> <li>formulate step-by-step plans as a guide to making</li> </ul> <p><b><u>Practical skills and techniques</u></b></p> <ul style="list-style-type: none"> <li>follow procedures for safety and hygiene</li> <li>use a wider range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components</li> <li>accurately measure, mark out, cut and shape materials and components</li> <li>accurately assemble, join and combine materials and components</li> <li>accurately apply a range of finishing techniques, including those from art and design</li> <li>use techniques that involve a number of steps</li> <li>demonstrate resourcefulness when tackling practical problems</li> </ul>	<p><b><u>Own ideas and products</u></b></p> <ul style="list-style-type: none"> <li>identify the strengths and areas for development in their ideas and products</li> <li>consider the views of others, including intended users, to improve their work</li> <li>critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make</li> <li>evaluate their ideas and products against their original design specification</li> </ul> <p><b><u>Existing products</u></b></p> <ul style="list-style-type: none"> <li>how well products have been designed</li> <li>how well products have been made</li> <li>why materials have been chosen</li> <li>what methods of construction have been used</li> <li>how well products work</li> <li>how well products achieve their purposes</li> <li>how well products meet user needs and wants</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 their intended purpose</li> </ul> <p><b><u>Key events and individuals</u></b></p> <p>Children should know about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products</p>	<p><b><u>Making products work</u></b></p> <ul style="list-style-type: none"> <li>how to use learning from science to help design and make products that work</li> <li>how to use learning from mathematics to help design and make products that work</li> <li>that materials have both functional properties and aesthetic qualities (that materials can be combined and mixed to create more useful characteristics)</li> <li>that mechanical and electrical systems have an input, process and output</li> <li>the correct technical vocabulary for the projects they are undertaking</li> <li>how more complex electrical circuits and components can be used to create functional product</li> <li>how to program a computer to monitor changes in the environment and control their products</li> <li>how to reinforce and strengthen a 3D framework</li> </ul>	<p><b><u>Where food comes from</u></b></p> <ul style="list-style-type: none"> <li>that a recipe can be adapted by adding or substituting one or more ingredients</li> <li>that 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</li> <li>that seasons may affect the food available</li> <li>how food is processed into ingredients that can be eaten or used in cooking</li> </ul> <p><b><u>Food preparation, cooking and nutrition</u></b></p> <ul style="list-style-type: none"> <li>how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</li> <li>how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking</li> <li>that recipes can be adapted to change the appearance, taste, texture and aroma</li> <li>that different food and drink contain different substances – nutrients, water and fibre – that are needed for health</li> <li>that a recipe can be adapted by adding or substituting one or more ingredients</li> </ul>