

**National Curriculum DESIGN Technology– Skills ladder**

Breadth of study	R	Y1	Y2	Y3	Y4	Y5	Y6
<p><b>Design</b></p>	<p>Work within different contexts such as story- based, home, school, playground.</p> <p>Generate ideas from existing examples.</p> <p>Begin to talk about their designs.</p>	<p>Work within a range of contexts e.g. story- based, playgrounds.</p> <p>State what products they are designing and making.</p> <p>Say whether their products are for themselves or other users.</p> <p>Describe what their products are for.</p> <p>Use existing knowledge to generate their own original designs.</p> <p>Begin to develop and communicate ideas by talking and drawing.</p>	<p>Work confidently within a range of contexts e.g. imaginary, local community, industry and wider environment.</p> <p>State what products they are designing and making.</p> <p>Say whether their products are for themselves or other users.</p> <p>Describe what their products are for.</p> <p>Say how their products will work and how they're suitable for intended users.</p> <p>Use simple design criteria to help develop their ideas.</p> <p>Generate ideas by drawing on their own experiences.</p> <p>Use knowledge of existing products to help come up with ideas.</p> <p>Develop and communicate ideas by talking and drawing.</p> <p>Model ideas by exploring materials, components, constructions kits and by making templates and mock-ups.</p> <p>Use information and communication technology, where appropriate, to develop and communicate their ideas.</p>	<p>Work confidently within a range of contexts, such as the home, school, leisure and industry.</p> <p>Describe the purpose of their products.</p> <p>Indicate design features of their products.</p> <p>Gather information about the needs and wants of individuals or groups.</p> <p>Develop their own design criteria.</p> <p>Share and clarify ideas through discussion.</p> <p>Model ideas using prototypes.</p> <p>Use annotated diagrams and some computer- aided design packages, to develop and communicate ideas.</p> <p>Generate realistic ideas, focusing on the needs of the user.</p> <p>Begin to take account of the availability of resources.</p>	<p>Work confidently in a range of contexts, e.g. home, school, leisure, culture, industry and wider environment.</p> <p>Describe the purpose of their products.</p> <p>Indicate design features of their products that will appeal to intended users.</p> <p>Gather information about the needs and wants of individuals or groups.</p> <p>Develop their own design criteria and use this to inform their ideas.</p> <p>Share and clarify ideas confidently, through discussion.</p> <p>Model ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches, some cross-sectional drawings and computer-aided design packages, to develop and communicate ideas.</p> <p>Generate realistic ideas, focusing on the needs of the user.</p> <p>Make design decisions that take account of the availability of resources.</p>	<p>Work confidently in a wide range of contexts, e.g. home, school, leisure, culture, industry, enterprise and wider environment.</p> <p>Describe in detail, the purpose of their products.</p> <p>Indicate design features of their products that will appeal to intended users.</p> <p>Gather information about the needs and wants of individuals or groups.</p> <p>Develop their own design criteria and use this to inform their ideas.</p> <p>Carry out research e.g. surveys and interviews to identify users' needs, wants and preferences.</p> <p>Develop a simple design specification to guide their thinking.</p> <p>Share and clarify ideas confidently, through discussion.</p> <p>Model ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design packages, to develop and communicate ideas.</p> <p>Generate realistic ideas, focusing on the needs of the user.</p> <p>Make design decisions that take account of the availability of resources.</p> <p>Generate innovative ideas from prior research.</p>	<p>Work confidently in a wide range of contexts, e.g. home, school, leisure, culture, industry, enterprise and wider environment.</p> <p>Describe in detail, the purpose of their products.</p> <p>Indicate design features of their products that will appeal to intended users.</p> <p>Gather information about the needs and wants of particular individuals and groups.</p> <p>Develop their own design criteria and use this to inform their ideas.</p> <p>Carry out research e.g. surveys, interviews, questionnaires and web-based resources, to identify users' needs, wants and preferences.</p> <p>Develop detailed design specifications to guide their thinking and planning.</p> <p>Share and clarify ideas confidently, through discussion.</p> <p>Model ideas using prototypes and pattern pieces.</p> <p>Use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design packages, to develop and communicate ideas.</p> <p>Generate realistic ideas, focusing on the needs of the user.</p> <p>Make design decisions that take account of the availability of resources.</p>

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<p><b>Making</b></p>	<p>Shows some planning skills by suggesting what to do next.</p> <p>Begins to follow safety procedures.</p> <p>Selects from a range of materials and components.</p>	<p>Plans by suggesting what to do next.</p> <p>Selects from a range of tools, materials and components.</p> <p>Follows procedures for safety and hygiene.</p> <p>Uses a range of materials, components, construction kits, textiles, food ingredients and mechanical products.</p> <p>Measures, marks out, shapes and cuts most materials.</p>	<p>Plans by suggesting what to do next.</p> <p>Selects from a range of tools, materials and components according to their characteristics.</p> <p>Explains their choices.</p> <p>Follows procedures for safety and hygiene.</p> <p>Uses a range of materials, components, construction kits, textiles, food ingredients and mechanical products.</p> <p>Measures, marks out, cuts and shapes a range of materials and components.</p> <p>Assembles, joins and combines materials and components.</p> <p>Begins to use finishing techniques, including those from art and design sessions.</p>	<p>Select tools and equipment suitable to the task.</p> <p>Explain their choices.</p> <p>Selects some materials and components suitable to the task.</p> <p>Order the main stages of making.</p> <p>Follow procedures for safety and hygiene.</p> <p>Use a wide range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients.</p> <p>Measures, marks out, cuts and shapes materials and components with some accuracy.</p> <p>Assembles, joins and combines many materials with some accuracy.</p> <p>Applies some finishing techniques.</p>	<p>Confidently select tools and equipment suitable to the task.</p> <p>Explain their choices, giving evidence.</p> <p>Selects materials and components suitable to the task.</p> <p>Order the main stages of making in logical steps.</p> <p>Follow procedures for safety and hygiene.</p> <p>Use an extensive range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients.</p> <p>Measures, marks out, cuts and shapes materials and components with accuracy.</p> <p>Accurately assembles, joins and combines most materials.</p> <p>Accurately apply several finishing techniques.</p>	<p>Confidently select tools and equipment suitable to the task.</p> <p>Explain their choices, giving evidence.</p> <p>Selects materials and components suitable to the task.</p> <p>Produce appropriate lists of tools, equipment and materials that they will need.</p> <p>Order the stages of the making process, in logical steps.</p> <p>Formulate step-by-step plans as guide to making.</p> <p>Follow procedures for safety and hygiene.</p> <p>Use an extensive range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients.</p> <p>Measures, marks out, cuts and shapes materials and components with accuracy.</p> <p>Accurately assembles, joins and combines most materials.</p> <p>Accurately apply a range of finishing techniques, including those from art and design sessions.</p> <p>Use techniques that involve a number of steps.</p> <p>Use resourcefulness when tackling practical problems.</p>	<p>Confidently select tools and equipment suitable to the task.</p> <p>Explain their choices, giving evidence.</p> <p>Selects materials and components suitable to the task.</p> <p>Produce appropriate lists of tools, equipment and materials that they will need.</p> <p>Order the stages of the making process, in logical steps.</p> <p>Formulate step-by-step plans as guide to making.</p> <p>Follow procedures for safety and hygiene.</p> <p>Use an extensive range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients.</p> <p>Measures, marks out, cuts and shapes materials and components with accuracy.</p> <p>Accurately assembles, joins and combines materials.</p> <p>Accurately apply a range of finishing techniques, including those from art and design.</p> <p>Use techniques that involve a number of steps.</p> <p>Use resourcefulness, resilience and innovation, when tackling practical problems.</p> <p>Explains next steps in learning, drawing from prior experience.</p>
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<p><b>Evaluating</b></p>	<p>Begin to talk about their design ideas and what they are making.</p> <p>Think about how to make their products better.</p> <p>Begin to explore what products are, who they are for, how they are used, where they are from.</p>	<p>Talk about their design ideas and what they are making.</p> <p>Talk about how to make their products better.</p> <p>Explore what products are, what they are made from, who they are for, how they are used, where they are from.</p> <p>Talk about likes and dislikes of existing products.</p>	<p>Talk about their design ideas and what they are making.</p> <p>Make simple judgements about their products and ideas against design criteria.</p> <p>Talk and write about how to make their products better.</p> <p>Explore what products are, what they are made from, who they are for, how they are used and where they might be used.</p> <p>Talk about likes and dislikes of existing products.</p> <p>Give reasons.</p>	<p>Identify the strengths and areas for development in their ideas and products.</p> <p>Consider the views of others.</p> <p>Refer to their design criteria as they design and make.</p> <p>Use their design criteria to evaluate their completed products.</p> <p>Investigate and analyse: how well products have been designed and made; which materials and methods were used and which were successful; how well the products worked; whether they achieved their purpose and the needs/wants of the users.</p> <p>Recognise successful inventors, designers, chefs and engineers, who have been influential in the design and technology industries.</p>	<p>Identify the strengths and areas for development in their ideas and products.</p> <p>Consider the views of others, including intended users, to improve their work.</p> <p>Refer to their design criteria as they design and make.</p> <p>Use their design criteria to evaluate and improve their completed products.</p> <p>Investigate and analyse: how well products have been designed and made; why materials have been chosen; what methods of construction were used; how well the products worked; whether they achieved their purpose and the needs/wants of the users.</p> <p>Investigate and analyse: who designed the products; where products were designed and made; when products were designed and made; whether products can be recycled or re-used.</p> <p>Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries.</p>	<p>Identify the strengths and areas for development in their ideas and products.</p> <p>Consider the views of others, including intended users, to improve their work.</p> <p>Refer to their design criteria as they design and make.</p> <p>Use their design criteria to evaluate and improve their completed products.</p> <p>Critically evaluate the quality of the design, manufacture and fitness for purpose of their products.</p> <p>Evaluate their ideas and products against their original design specification.</p> <p>Investigate and analyse: how well products have been designed and made; why materials have been chosen; what methods of construction were used; how well the products worked; whether they achieved their purpose and the needs/wants of the users.</p> <p>Investigate and analyse: who designed the products; where products were designed and made; when products were designed and made; whether products can be recycled or re-used.</p> <p>Consider cost and sustainability.</p> <p>Consider the impact and innovative qualities of their products.</p> <p>Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries.</p>	<p>Confidently identify the strengths and areas for development in their ideas and products.</p> <p>Consider the views of others, including intended users, to improve their work.</p> <p>Refer to their design criteria as they design and make.</p> <p>Use their design criteria to evaluate and improve their completed products.</p> <p>Critically evaluate the quality of the design, manufacture and fitness for purpose of their products.</p> <p>Evaluate their ideas and products against their original design specification.</p> <p>Investigate and analyse: how well products have been designed and made; why materials have been chosen; what methods of construction were used; how well the products worked; whether they achieved their purpose and the needs/wants of the users.</p> <p>Investigate and analyse: who designed the products; where products were designed and made; when products were designed and made; whether products can be recycled or re-used.</p> <p>Investigate and analyse: how much products cost to make; how innovative products are; how sustainable the materials in products are; what impact products have beyond their intended purpose.</p> <p>Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries.</p>
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<p><b>Technical Knowledge</b></p>	<p>Pupils recognise that a range of technology is used in places such as homes and schools.</p> <p>They select and use technology for particular purposes.</p> <p>They show an interest in toys with buttons and mechanisms.</p> <p>Begin to know about the simple working characteristics of materials and components.</p> <p>Begin to understand the movement of simple mechanisms such as levers, sliders and wheels.</p> <p>Know that food ingredients should be combined according to their sensory characteristics.</p>	<p>Pupils recognise a range of technology is used in places such as homes and schools.</p> <p>They select and use technology for particular purposes.</p> <p>They know how to operate simple equipment and show an interest in toys with buttons, flaps and simple mechanisms and operate them successfully.</p> <p>Pupils understand the simple working characteristics of materials and components.</p> <p>Know about the movement of simple mechanisms such as levers, sliders, wheels and axles.</p> <p>Recognise that food ingredients should be combined according to their sensory characteristics.</p> <p>Begin to use the correct technical vocabulary for projects.</p>	<p>Pupils understand the working characteristics of materials and components.</p> <p>They know about the movement of simple mechanisms such as levers, sliders, wheels and axles.</p> <p>Recognise that food ingredients should be combined according to their sensory characteristics.</p> <p>Understand how freestanding structures can be made stronger, stiffer and more stable.</p> <p>Recognise that 3D textile products can be assembled from two identical fabric shapes.</p> <p>Use the correct technical vocabulary for projects.</p>	<p>Pupils know how to use learning from science and mathematics to help design and make products that work.</p> <p>They understand that materials have functional and aesthetic qualities.</p> <p>Recognise that materials can be combined and mixed to create more useful characteristics.</p> <p>Know how mechanical systems such as levers and linkages create movement.</p> <p>Know that simple electrical circuits and components can be used to create functional products.</p> <p>Program a computer to control their products.</p> <p>Make strong, stiff shell structures.</p> <p>Know that a single fabric shape can be used to make a 3D textile product.</p> <p>Recognise several fresh, pre-cooked and processed foods.</p>	<p>Pupils use learning from science, mathematics and other subjects to help design and make products that work.</p> <p>They understand that materials have functional and aesthetic qualities.</p> <p>Apply this thinking successfully to their own products.</p> <p>Recognise that materials can be combined and mixed to create more useful characteristics.</p> <p>Know that mechanical and electrical systems have an input, process and output.</p> <p>Know how mechanical systems such as levers and linkages create movement.</p> <p>Know that simple electrical circuits and components can be used to create functional products.</p> <p>Program a computer to control their products.</p> <p>Make strong, stiff shell structures for a purpose.</p> <p>Know that a single fabric shape can be used to make a 3D textile product.</p> <p>Recognise a range of fresh, pre-cooked and processed foods.</p> <p>Program a computer to control their products.</p> <p>Make strong, stiff shell structures for a purpose.</p> <p>Know that a single fabric shape can be used to make a 3D textile product.</p> <p>Recognise a range of fresh, pre-cooked and processed foods.</p>	<p>Recognise that materials can be combined and mixed to create more useful characteristics.</p> <p>Know that mechanical and electrical systems have an input, process and output.</p> <p>Know how mechanical systems such as levers and linkages create movement.</p> <p>Know that simple electrical circuits and components can be used to create functional products.</p> <p>Program a computer to control their products.</p> <p>Make strong, stiff shell structures for a purpose.</p> <p>Know that a single fabric shape can be used to make a 3D textile product.</p> <p>Recognise a range of fresh, pre-cooked and processed foods.</p> <p>Know that mechanical systems e.g. cams, pulleys or gears create movement.</p> <p>Explore more complex electrical circuits and components.</p> <p>Program a computer to monitor changes in the environment and control their products.</p> <p>Reinforce and strengthen a 3D framework.</p> <p>Know that 3D textile products can be made from a combination of fabric shapes.</p> <p>Adapt recipes by adding or substituting one or more ingredients.</p>	<p>Recognise that materials can be combined and mixed to create more useful characteristics.</p> <p>Know that mechanical and electrical systems have an input, process and output.</p> <p>Know how mechanical systems such as levers and linkages create movement.</p> <p>Know that simple electrical circuits and components can be used to create functional products.</p> <p>Program computer systems and devices to control their products.</p> <p>Make strong, stiff shell structures for a purpose.</p> <p>Know that a single fabric shape can be used to make a 3D textile product.</p> <p>Recognise a wide range of fresh, pre-cooked and processed foods.</p> <p>Know that mechanical systems e.g. cams, pulleys or gears create movement.</p> <p>Explore more complex electrical circuits and components.</p> <p>Program computers and devices to monitor changes in the environment and control their products.</p> <p>Reinforce and strengthen a 3D framework.</p> <p>Know that 3D textile products can be made from a combination of fabric shapes.</p> <p>Recreate and adapt existing and new recipes by adding or substituting a range of ingredients.</p>
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<p><b>Cooking and Nutrition</b></p>	<p>Begin to recognise that food comes from plants or animals.</p> <p>Food is farmed, grown elsewhere or caught.</p> <p>Begin to name and sort foods into the five groups in ‘The Eatwell Plate.’</p> <p>Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day.</p> <p>Start to prepare simple dishes.</p> <p>Use techniques e.g. cutting and peeling.</p>	<p>Recognise that food comes from plants or animals.</p> <p>Food is farmed, grown elsewhere or caught.</p> <p>Name and sort foods into the five groups in ‘The Eatwell Plate.’</p> <p>Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day.</p> <p>Prepare some simple dishes.</p> <p>Use techniques e.g. cutting, peeling and grating.</p>	<p>Know that food comes from plants or animals.</p> <p>Food is farmed, grown elsewhere (e.g home), imported or caught.</p> <p>Name and sort foods into the five groups in ‘The Eatwell Plate.’</p> <p>Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day.</p> <p>Know how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Prepare a range of simple dishes.</p> <p>Use techniques e.g. cutting, chopping, peeling and grating.</p>	<p>Know that food is farmed, reared, grown elsewhere (e.g home), imported or caught locally, regionally and internationally.</p> <p>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically, including the use of a heat source.</p> <p>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Recognise that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on ‘The Eatwell Plate.’</p> <p>Know that to be active and healthy, food is needed to provide energy for the body.</p>	<p>Know that food is farmed, reared, grown elsewhere (e.g. home, allotments), exported, imported or caught. This can be on a local, regional and international scale.</p> <p>Know how to prepare and cook a variety of savoury and some sweet dishes safely and hygienically, including the use of a heat source.</p> <p>Know how to use a wide range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on ‘The Eatwell Plate.’</p> <p>Know that to be active and healthy, food is needed to provide energy for the body.</p>	<p>Know that food is farmed, reared, grown elsewhere (e.g. home, allotments), exported, imported or caught. This can be on a local, regional and international scale.</p> <p>Begin to know that seasons and weather affect food availability.</p> <p>Begin to know how food is processed into ingredients that can be eaten or used in cooking.</p> <p>Know how to prepare and cook a variety of savoury and some sweet dishes safely and hygienically, including the use of a heat source.</p> <p>Know how to use a wide range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on ‘The Eatwell Plate.’</p> <p>Know that to be active and healthy, food is needed to provide energy for the body.</p> <p>Know that recipes can be adapted to change the taste, texture, aroma and appearance.</p> <p>Know that different foods contain substances that are needed for health e.g. water, fibre, vitamins and nutrients.</p>	<p>Know that food is farmed, reared, grown elsewhere (e.g. home, allotments), exported, imported or caught. This can be on a local, regional and international scale.</p> <p>Begin to know that seasons and weather affect food availability.</p> <p>Begin to know how food is processed into ingredients that can be eaten or used in cooking.</p> <p>Know how to prepare and cook a variety of savoury and some sweet dishes safely and hygienically, including the use of a heat source.</p> <p>Know how to use a wide range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on ‘The Eatwell Plate.’</p> <p>Know that to be active and healthy, food is needed to provide energy for the body.</p> <p>Know that recipes can be adapted to change the taste, texture, aroma and appearance.</p> <p>Know that different foods contain substances that are needed for health e.g. water, fibre, vitamins, minerals and nutrients.</p> <p>Understand that healthy diets must incorporate the correct amounts of food types and substances.</p> <p>Understand that exercise is also important for our wellbeing and fitness.</p>
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