Donington Cowley Endowed Primary School - Design Technology– Skills Progression

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<tr><th></th><th>Foundation</th><th>Year 1</th><th>Year 2</th><th>Year 3</th><th>Year 4</th><th>Year 5</th><th>Year 6</th></tr>
<tr><td>A Design Technologist will be able …</td><td>By the end of EYFS:
Understanding of the World:
Technology
• To recognise a range of technology is used in places such as homes and schools.
• Select and use technology for a particular purpose
Expressive arts and design: Exploring and using media and materials
• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function
Being imaginative
• Use what they have learnt about media and materials in original ways, thinking about uses and purposes.
• Represent their own ideas, thoughts and feelings through design and technology.
Physical Development: Health and self-care
• Understand the importance of a healthy diet
• Talk about ways to keep healthy and safe</td><td colspan="2">By the end of Key Stage 1:
Design:
• design purposeful, functional, appealing products for themselves and other users based on design criteria
• generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
Make
• select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
• select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
Evaluate
• explore and evaluate a range of existing products
• evaluate their ideas and products against design criteria
Technical knowledge
• build structures, exploring how they can be made stronger, stiffer and more stable
• explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.
Cooking and nutrition
• use the basic principles of a healthy and varied diet to prepare dishes
• understand where food comes from.</td><td colspan="4">By the end of Key Stage 2:
Design
• 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
Make
• 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
Evaluate
• 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
Technical knowledge
• 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.
Cooking and nutrition
• 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.</td></tr>
<tr><td>Breadth of Study
Design</td><td>Work within different contexts such as story-based, home, school, playground.
Generate ideas from existing examples.
Begin to talk about their designs.</td><td>Work within a range of contexts e.g. story-based, playgrounds.
State what products they are designing and making.
Say whether their products are for themselves or other users.
Describe what their products are for.
Use existing knowledge to generate their own original designs.
Begin to develop and communicate ideas by talking and drawing.</td><td>Work confidently within a range of contexts e.g. imaginary, local community, industry and wider environment.
State what products they are designing and making.
Say whether their products are for themselves or other users.
Describe what their products are for.
Say how their products will work and how they’re suitable for intended users.
Use simple design criteria to help develop their ideas.
Generate ideas by drawing on their own experiences.
Use knowledge of existing products to help come up with ideas.
Develop and communicate ideas by talking and drawing.
Model ideas by exploring materials, components, constructions kits and by making templates and mock-ups.
Use information and communication technology, where appropriate, to develop and communicate their ideas.</td><td>Work confidently within a range of contexts, such as the home, school, leisure and industry.
Describe the purpose of their products.
Indicate design features of their products.
Gather information about the needs and wants of individuals or groups.
Develop their own design criteria.
Share and clarify ideas through discussion.
Model ideas using prototypes.
Use annotated diagrams and some computer- aided design packages, to develop and communicate ideas.
Generate realistic ideas, focusing on the needs of the user.
Begin to take account of the availability of resources.</td><td>Work confidently in a range of contexts, e.g. home, school, leisure, culture, industry and wider environment.
Describe the purpose of their products.
Indicate design features of their products that will appeal to intended users.
Gather information about the needs and wants of individuals or groups.
Develop their own design criteria and use this to inform their ideas.
Share and clarify ideas confidently, through discussion.
Model ideas using prototypes and pattern pieces.
Use annotated sketches, some cross-sectional drawings and computer-aided design packages, to develop and communicate ideas.
Generate realistic ideas, focusing on the needs of the user.
Make design decisions that take account of the availability of resources.</td><td>Work confidently in a wide range of contexts, e.g. home, school, leisure, culture, industry, enterprise and wider environment.
Describe in detail, the purpose of their products.
Indicate design features of their products that will appeal to intended users.
Gather information about the needs and wants of individuals or groups.
Develop their own design criteria and use this to inform their ideas.
Carry out research e.g. surveys and interviews to identify users’ needs, wants and preferences.
Develop a simple design specification to guide their thinking.
Share and clarify ideas confidently, through discussion.
Model ideas using prototypes and pattern pieces.
Use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design packages, to develop and communicate ideas.
Generate realistic ideas, focusing on the needs of the user.
Make design decisions that take account of the availability of resources.
Generate innovative ideas from prior research.</td><td>Work confidently in a wide range of contexts, e.g. home, school, leisure, culture, industry, enterprise and wider environment.
Describe in detail, the purpose of their products.
Indicate design features of their products that will appeal to intended users.
Gather information about the needs and wants of particular individuals and groups.
Develop their own design criteria and use this to inform their ideas.
Carry out research e.g. surveys, interviews, questionnaires and web-based resources, to identify users’ needs, wants and preferences.
Develop detailed design specifications to guide their thinking and planning.
Share and clarify ideas confidently, through discussion.
Model ideas using prototypes and pattern pieces.
Use annotated sketches, cross-sectional drawings, exploded diagrams and computer-aided design packages, to develop and communicate ideas.
Generate realistic ideas, focusing on the needs of the user.
Make design decisions that take account of the availability of resources.</td></tr>
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Breadth of Study Making	Shows some planning skills by suggesting what to do next. Begins to follow safety procedures. Selects from a range of materials and components.	Plans by suggesting what to do next. Selects from a range of tools, materials and components. Follows procedures for safety and hygiene. Uses a range of materials, components, construction kits, textiles, food ingredients and mechanical products. Measures, marks out, shapes and cuts most materials.	Plans by suggesting what to do next. Selects from a range of tools, materials and components according to their characteristics. Explains their choices. Follows procedures for safety and hygiene. Uses a range of materials, components, construction kits, textiles, food ingredients and mechanical products. Measures, marks out, cuts and shapes a range of materials and components. Assembles, joins and combines materials and components. Begins to use finishing techniques, including those from art and design sessions.	Select tools and equipment suitable to the task. Explain their choices. Selects some materials and components suitable to the task. Order the main stages of making. Follow procedures for safety and hygiene. Use a wide range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients. Measures, marks out, cuts and shapes materials and components with some accuracy. Assembles, joins and combines many materials with some accuracy. Applies some finishing techniques.	Confidently select tools and equipment suitable to the task. Explain their choices, giving evidence. Selects materials and components suitable to the task. Order the main stages of making in logical steps. Follow procedures for safety and hygiene. Use an extensive range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients. Measures, marks out, cuts and shapes materials and components with accuracy. Accurately assembles, joins and combines most materials. Accurately apply several finishing techniques.	Confidently select tools and equipment suitable to the task. Explain their choices, giving evidence. Selects materials and components suitable to the task. Produce appropriate lists of tools, equipment and materials that they will need. Order the stages of the making process, in logical steps. Formulate step-by-step plans as guide to making. Follow procedures for safety and hygiene. Use an extensive range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients. Measures, marks out, cuts and shapes materials and components with accuracy. Accurately assembles, joins and combines most materials. Accurately apply a range of finishing techniques, including those from art and design sessions. Use techniques that involve a number of steps. Use resourcefulness when tackling practical problems.	Confidently select tools and equipment suitable to the task. Explain their choices, giving evidence. Selects materials and components suitable to the task. Produce appropriate lists of tools, equipment and materials that they will need. Order the stages of the making process, in logical steps. Formulate step-by-step plans as guide to making. Follow procedures for safety and hygiene. Use an extensive range of materials and components e.g. textiles, mechanical, construction kits, electrical and food ingredients. Measures, marks out, cuts and shapes materials and components with accuracy. Accurately assembles, joins and combines materials. Accurately apply a range of finishing techniques, including those from art and design. Use techniques that involve a number of steps. Use resourcefulness, resilience and innovation, when tackling practical problems. Explains next steps in learning, drawing from prior experience.

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	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Breadth of Study Evaluating	Begin to talk about their design ideas and what they are making. Think about how to make their products better. Begin to explore what products are, who they are for, how they are used, where they are from.	Talk about their design ideas and what they are making. Talk about how to make their products better. Explore what products are, what they are made from, who they are for, how they are used, where they are from. Talk about likes and dislikes of existing products.	Talk about their design ideas and what they are making. Make simple judgements about their products and ideas against design criteria. Talk and write about how to make their products better. Explore what products are, what they are made from, who they are for, how they are used and where they might be used. Talk about likes and dislikes of existing products. Give reasons.	Identify the strengths and areas for development in their ideas and products. Consider the views of others. Refer to their design criteria as they design and make. Use their design criteria to evaluate their completed products. 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. Recognise successful inventors, designers, chefs and engineers, who have been influential in the design and technology industries.	Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate and improve their completed products. 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. 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 reused. Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries.	Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate and improve their completed products. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products. Evaluate their ideas and products against their original design specification. 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. 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. Consider cost and sustainability. Consider the impact and innovative qualities of their products. Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries.	Confidently identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Refer to their design criteria as they design and make. Use their design criteria to evaluate and improve their completed products. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products. Evaluate their ideas and products against their original design specification. 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. 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. 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. Recognise several inventors, designers, chefs, manufacturers and engineers, who have been influential in the design and technology industries.

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Breadth of Study Technical Knowledge	Pupils recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. They show an interest in toys with buttons and mechanisms. Begin to know about the simple working characteristics of materials and components. Begin to understand the movement of simple mechanisms such as levers, sliders and wheels. Know that food ingredients should be combined according to their sensory characteristics.	Pupils recognise a range of technology is used in places such as homes and schools. They select and use technology for particular purposes. They know how to operate simple equipment and show an interest in toys with buttons, flaps and simple mechanisms and operate them successfully. Pupils understand the simple working characteristics of materials and components. Know about the movement of simple mechanisms such as levers, sliders, wheels and axles. Recognise that food ingredients should be combined according to their sensory characteristics. Begin to use the correct technical vocabulary for projects.	Pupils understand the working characteristics of materials and components. They know about the movement of simple mechanisms such as levers, sliders, wheels and axles. Recognise that food ingredients should be combined according to their sensory characteristics. Understand how freestanding structures can be made stronger, stiffer and more stable. Recognise that 3D textiles products can be assembled from two identical fabric shapes. Use the correct technical vocabulary for projects.	Pupils know how to use learning from science and mathematics to help design and make products that work. They understand that materials have functional and aesthetic qualities. Recognise that materials can be combined and mixed to create more useful characteristics. Know how mechanical systems such as levers and linkages create movement. Know that simple electrical circuits and components can be used to create functional products. Program a computer to control their products. Make strong, stiff shell structures. Know that a single fabric shape can be used to make a 3D textile product. Recognise several fresh, precooked and processed foods.	Pupils use learning from science, mathematics and other subjects to help design and make products that work. They understand that materials have functional and aesthetic qualities. Apply this thinking successfully to their own products. Recognise that materials can be combined and mixed to create more useful characteristics. Know that mechanical and electrical systems have an input, process and output. Know how mechanical systems such as levers and linkages create movement. Know that simple electrical circuits and components can be used to create functional products. Program a computer to control their products. Make strong, stiff shell structures for a purpose. Know that a single fabric shape can be used to make a 3D textile product. Recognise a range of fresh, precooked and processed foods.	Recognise that materials can be combined and mixed to create more useful characteristics. Know that mechanical and electrical systems have an input, process and output. Know how mechanical systems such as levers and linkages create movement. Know that simple electrical circuits and components can be used to create functional products. Program a computer to control their products. Make strong, stiff shell structures for a purpose. Know that a single fabric shape can be used to make a 3D textile product. Recognise a range of fresh, precooked and processed foods. Know that mechanical systems e.g. cams, pulleys or gears create movement. Explore more complex electrical circuits and components. Program a computer to monitor changes in the environment and control their products. Reinforce and strengthen a 3D framework. Know that 3D textile products can be made from a combination of fabric shapes. Adapt recipes by adding or substituting one or more ingredients.	Recognise that materials can be combined and mixed to create more useful characteristics. Know that mechanical and electrical systems have an input, process and output. Know how mechanical systems such as levers and linkages create movement. Know that simple electrical circuits and components can be used to create functional products. Program computer systems and devices to control their products. Make strong, stiff shell structures for a purpose. Know that a single fabric shape can be used to make a 3D textile product. Recognise a wide range of fresh, pre-cooked and processed foods. Know that mechanical systems e.g. cams, pulleys or gears create movement. Explore more complex electrical circuits and components. Program computers and devices to monitor changes in the environment and control their products. Reinforce and strengthen a 3D framework. Know that 3D textile products can be made from a combination of fabric shapes. Recreate and adapt existing and new recipes by adding or substituting a range of ingredients.

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	Foundation	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Breadth of Study Cooking and Nutrition	Begin to recognise that food comes from plants or animals. Food is farmed, grown elsewhere or caught. Begin to name and sort foods into the five groups in 'The Eatwell Plate.' Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day. Start to prepare simple dishes. Use techniques e.g. cutting and peeling.	Recognise that food comes from plants or animals. Food is farmed, grown elsewhere or caught. Name and sort foods into the five groups in 'The Eatwell Plate.' Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day. Prepare some simple dishes. Use techniques e.g. cutting, peeling and grating.	Know that food comes from plants or animals. Food is farmed, grown elsewhere (e.g home), imported or caught. Name and sort foods into the five groups in 'The Eatwell Plate.' Begin to recognise that everyone should eat at least five portions of fruit and vegetables every day. Know how to prepare simples dishes safely and hygienically, without using a heat source. Prepare a range of simple dishes. Use techniques e.g. cutting, chopping, peeling and grating.	Know that food is farmed, reared, grown elsewhere (e.g home), imported or caught locally, regionally and internationally. Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically, including the use of a heat source. Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Recognise that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on 'The Eatwell Plate.' Know that to be active and healthy, food is needed to provide energy for the body.	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. Know how to prepare and cook a variety of savoury and some sweet dishes safely and hygienically, including the use of a heat source. Know how to use a wide range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on 'The Eatwell Plate.' Know that to be active and healthy, food is needed to provide energy for the body.	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. Begin to know that seasons and weather affect food availability. Begin to know how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of savoury and some sweet dishes safely and hygienically, including the use of a heat source. Know how to use a wide range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on 'The Eatwell Plate.' Know that to be active and healthy, food is needed to provide energy for the body. Know that recipes can be adapted to change the taste, texture, aroma and appearance. Know that different foods contain substances that are needed for health e.g. water, fibre, vitamins and nutrients.	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. Begin to know that seasons and weather affect food availability. Begin to know how food is processed into ingredients that can be eaten or used in cooking. Know how to prepare and cook a variety of savoury and some sweet dishes safely and hygienically, including the use of a heat source. Know how to use a wide range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Know that a healthy diet is made up of a variety and balance of different foods and drinks, as depicted on 'The Eatwell Plate.' Know that to be active and healthy, food is needed to provide energy for the body. Know that recipes can be adapted to change the taste, texture, aroma and appearance. Know that different foods contain substances that are needed for health e.g. water, fibre, vitamins, minerals and nutrients. Understand that healthy diets must incorporate the correct amounts of food types and substances. Understand that exercise is also important for our wellbeing and fitness.