# Curriculum Progression for Design and Technology

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## INTENT

At Frodsham CE Primary School, our design and technology curriculum inspires children to be creative, technical and imaginative thinkers and to develop the confidence to participate successfully in an increasingly technological world.

We aim to provide a broad, balanced and differentiated curriculum to ensure the progressive development of knowledge and skills. We want our children to learn how to take risks, become resourceful, innovative, enterprising and capable citizens through evaluation of past and present design and technology. To develop a critical understanding of its impact on daily life and the wider world, using the language of design and technology.

We want our children to foster enjoyment, satisfaction and purpose in designing and making things, apply a growing body of knowledge, understanding and skills in order to design and make prototypes and products for a wide range of users. Encouraging our children to select appropriate tools and techniques when making a product, whilst following safe procedures, understand and apply the principles of nutrition and to learn how to cook.

## IMPLEMENTATION

The teaching of Design and Technology across the school follows the National Curriculum 2014 through the use of Design and Technology Association's 'Projects On A Page' documents. Children design products with a purpose in mind and an intended user of the products. Food technology is taught every year across the school with children developing an understanding of where food comes from, the importance of a varied and healthy diet and how to prepare this.

Through well planned and resourced projects and experiences, design and technology is planned to be differentiated to challenge pupils of all abilities. The Design and Make Assignments specified in 'Projects On A Page' include the following:

- Investigate, Disassemble and Evaluate' Activities (IDEAs): These tasks should be set by the teacher with the pupils working in pairs/small groups and then reporting their findings.

- Focused Practical Tasks(FPTs): These tasks are aimed at individual pupils to help them develop specific skills. They should be designed so that the pupil is able to achieve and develop in confidence. (These tasks should be teacher directed).

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- Design and Make Assignments (DMAs): These tasks involve compiling all knowledge and investigations done previously to design and make an object of their own.

During the EYFS, pupils explore and use a variety of media and materials through a combination of child initiated and adult directed activities. They have the opportunities to learn to:

- Use different media and materials to express their own ideas
- Use what they have learnt about media and materials in original ways, thinking about form, function and purpose
- Make plans and construct with a purpose in mind using a variety of resources
- Develop skills to use simple tools and techniques appropriately, effectively and safely
- Select appropriate resources for a product and adapt their work where necessary
- Cook and prepare food adhering to good health and hygiene routines

Design and Technology lessons are taught in a variety of ways across the school. Individual class teachers will decide whether or not their topics will be taught over a period of weeks or whether to teach it in a condensed period.

Design and Technology is an inspiring, rigorous and practical subject, requiring creativity, resourcefulness, and imagination. Our children enjoy design and making products that solve real and relevant problems within a variety of contexts. It is very cross - curricular and draws upon subject knowledge and skills within Mathematics, Science, History, Computing and Art. They learn to take risks, be reflective, innovative, enterprising and resilient. Through the evaluation of past and present technology they can reflect upon the impact of Design and Technology on everyday life and the wider world.

| Autumn term | Spring Term | Summer Term |
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| **NURSERY** | | |
| **Cooking and Nutrition**<br>**Focus – using a grater safely** | **Art focus** | **Junk Modelling**<br>**Focus - Working with tubs – cutting and shaping with scissors, tape.** |
| **Product – Pizza toppings** | | **Product – boat that floats** |

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| **Children can…**<br>• Choose the right resources to carry out their own plan.<br>• Use one-handed tools and equipment, for example, a knife to spread. | | **Children can…**<br>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.<br>• Develop their own ideas and then decide which materials to use to express them.<br>• Choose the right resources to carry out their own plan.<br>• Use one-handed tools and equipment, for example, making snips in paper with scissors. |
| **Key vocabulary:**<br>Knife, fork, spoon, plate, bowl, cup, chopping board, oven, cook, melt, greengrocer, grater, spread, cut, sharp,<br><br>Names of toppings; cheese, tomato, ham, mushroom, pepper, sweetcorn.<br><br>Sensory vocabulary; e.g. soft, juicy, crunchy, sweet, sour, hard. | | **Key vocabulary:**<br>Move, push, pull, boat, float, sink, build, cardboard, box, glue, masking tape, join, combine, materials, shapes. |
| **RECEPTION** | | |
| **Cooking and Nutrition**<br>**Focus – using a knife safely to chop** | **Junk Modelling**<br>**Focus – Working with paper, card – cutting, shaping and joining with scissors, glue and tape.** | **Art focus** |
| **Product – Pumpkin/vegetable Soup** | **Product – Red Naughty Bus** | |
| **Children can…**<br>• Use a range of small tools including a | **Children can…**<br>• Safely use and explore a variety of | |

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| knife to chop safely.<br>• Manage their own basic hygiene and understand the importance of healthy food choices.<br>• Prepare and use senses for smell and appearance. | materials, tools and techniques, experimenting with colour, design, texture, form and function.<br>• Share their creations, explaining the process they have used.<br>• Use a range of small tools, including scissors and paintbrushes. | |
| **Key vocabulary:**<br>Names of vegetables, pumpkin, harvest, grow, pick, knife, cut, bridge, sharp, safety, chopping board, pan, cook, healthy, unhealthy, vitamins, minerals, like, dislike, taste, cook.<br><br>Sensory vocabulary; e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, rough, flesh, skin. | **Key vocabulary:**<br>Cut, shape, large, medium, small, masking tape, sellotape, glue, hot glue gun, wood, cardboard, box, paper, cut, scissors, colour, design.<br><br>Bus vocabulary; wheels, driver, windows, double decker, number plate, windscreen, wipers, face, | |
| **YEAR 1** | | |
| **Cooking and Nutrition**<br>**Focus – Slicing/Cutting – Preparing fruit & vegetables**<br>**(Healthy and varied diet)** | **Mechanisms**<br>**Focus – Sliders & Levers** | **Structures**<br>**Focus – Freestanding structures** |
| **Product - Fruit Kebab** | **Product - Group Storybook** | **Product - African Animal Sculpture** |
| **Children can…**<br>**Technical knowledge and understanding**<br>• 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.<br>• Know and use technical and sensory | **Children can…**<br>**Technical knowledge and understanding**<br>• Explore and use sliders and levers.<br>• Understand that different mechanisms produce different types of movement.<br>• Know and use technical vocabulary relevant to the project. | **Children can…**<br>**Technical knowledge and understanding**<br>• Know how to make freestanding structures stronger, stiffer and more stable.<br>• Know and use technical vocabulary relevant to the project. |

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| vocabulary relevant to the project.<br><br>**Designing**<br>• Design appealing products for a particular user based on simple design criteria.<br>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.<br>• Communicate these ideas through talk and drawings.<br><br>**Making**<br>• Use simple utensils and equipment to e.g. peel, cut, slice, squeeze, grate and chop safely.<br>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.<br><br>**Evaluating**<br>• Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.<br>• Evaluate ideas and finished products against design criteria, including intended user and purpose. | **Designing**<br>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.<br>• Develop, model and communicate their ideas through drawings and mock-ups with card and paper.<br><br>**Making**<br>• Plan by suggesting what to do next.<br>• Select and use tools, explaining their choices, to cut, shape and join paper and card.<br>• Use simple finishing techniques suitable for the product they are creating.<br><br>**Evaluating**<br>• Explore a range of existing books and everyday<br>products that use simple sliders and levers.<br>• Evaluate their product by discussing how well it works<br>in relation to the purpose and the user and whether it meets design criteria. | **Designing**<br>• Generate ideas based on simple design criteria and their own experiences, explaining what they could make.<br>• Develop, model and communicate their ideas through talking, mock-ups and drawings.<br><br>**Making**<br>• Plan by suggesting what to do next.<br>• Select and use tools, skills and techniques, explaining their choices.<br>• Select new and reclaimed materials and construction kits to build their structures.<br>• Use simple finishing techniques suitable for the structure they are creating.<br><br>**Evaluating**<br>• Explore a range of existing freestanding structures in the school and local environment e.g. everyday products and buildings.<br>• Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria. |
| **Key vocabulary:**<br>fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, | **Key vocabulary:**<br>slider, lever, pivot, slot, bridge/guide, card, masking tape, paper fastener, join, pull, push, up, down, straight, curve, forwards, | **Key vocabulary:**<br>cut, fold, join, fix, structure, wall, tower, framework, weak, strong, base, top, underneath, side, edge, surface, thinner, |

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| smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria | backwards, design, make, evaluate, user, purpose, ideas, design criteria, product, function | thicker, corner, point, straight, curved, metal, wood, plastic, circle, triangle, square, rectangle, cuboid, cube, cylinder, design, make, evaluate, user, purpose, ideas, design criteria, product, function |
| **YEAR 2** | | |
| **Cooking and Nutrition**<br>**Focus – Measuring & Weigh Ingredients – Preparing fruit & vegetables (Where food comes from)** | **Textiles**<br>**Focus – Templates & Joining techniques** | **Mechanisms**<br>**Focus – Wheels & Axels** |
| **Product - Smoothies** | **Product - Bag** | **Product – Moving Vehicle** |
| **Children can…**<br>**Technical knowledge and understanding**<br>• Understand where a range of fruit and vegetables come from e.g. farmed or grown at home.<br>• Know and use technical and sensory vocabulary relevant to the project.<br><br>**Designing**<br>• Design appealing products for a particular user based on simple design criteria.<br>• Generate initial ideas and design criteria through investigating a variety of fruit and vegetables.<br>• Communicate these ideas through talk and drawings.<br><br>**Making**<br>• Use simple utensils and equipment to e.g. | **Children can…**<br>**Technical knowledge and understanding**<br>• Understand how simple 3-D textile products are made, using a template to create two identical shapes.<br>• Understand how to join fabrics using different techniques e.g. running stitch, glue, over stitch, stapling.<br>• Explore different finishing techniques e.g. using painting, fabric crayons, stitching, sequins, buttons and ribbons.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Design a functional and appealing product for a chosen user and purpose based on simple design criteria.<br>• Generate, develop, model and | **Children can…**<br>**Technical knowledge and understanding**<br>• Explore and use wheels, axles and axle holders.<br>• Distinguish between fixed and freely moving axles.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Generate initial ideas and simple design criteria through talking and using own experiences.<br>• Develop and communicate ideas through drawings and mock-ups.<br><br>**Making**<br>• Select from and use a range of tools and equipment to perform practical tasks such as |

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| peel, cut, slice, squeeze, grate and chop safely.<br>• Select from a range of fruit and vegetables according to their characteristics e.g. colour, texture and taste to create a chosen product.<br><br>**Evaluating**<br>• Taste and evaluate a range of fruit and vegetables to determine the intended user's preferences.<br>• Evaluate ideas and finished products against design criteria, including intended user and purpose. | communicate their ideas as appropriate through talking, drawing, templates, mock-ups and information and communication technology.<br><br>**Making**<br>• Select from and use a range of tools and equipment to perform practical tasks such as marking out, cutting, joining and finishing.<br>• Select from and use textiles according to their characteristics.<br><br>**Evaluating**<br>• Explore and evaluate a range of existing textile products relevant to the project being undertaken.<br>• Evaluate their ideas throughout and their final products against original design criteria. | cutting and joining to allow movement and finishing.<br>• Select from and use a range of materials and components such as paper, card, plastic and wood according to their characteristics.<br><br>**Evaluating**<br>• Explore and evaluate a range of products with wheels and axles.<br>• Evaluate their ideas throughout and their products against original criteria. |
| **Key vocabulary:**<br>fruit and vegetable names, names of equipment and utensils, sensory vocabulary e.g. soft, juicy, crunchy, sweet, sticky, smooth, sharp, crisp, sour, hard, flesh, skin, seed, pip, core, slicing, peeling, cutting, squeezing, healthy diet, choosing, ingredients, planning, investigating tasting, arranging, popular, design, evaluate, criteria | **Key vocabulary:**<br>names of existing products, joining and finishing techniques, tools, fabrics and components, template, pattern pieces, mark out, join, decorate, finish, features, suitable, quality mock-up, design brief, design criteria, make, evaluate, user, purpose, function | **Key vocabulary:**<br>vehicle, wheel, axle, axle holder, chassis, body, cab, assembling, cutting, joining, shaping, finishing, fixed, free, moving, mechanism, names of tools, equipment and materials used, design, make, evaluate, purpose, user, criteria, functional |
| **YEAR 3** | | |

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| Mechanical Systems<br>Focus – Pneumatic | Cooking and Nutrition<br>Focus – Healthy & varied diet | Structures<br>Focus – Shell structures<br>(including computer-aided design) |
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| **Product - Pneumatic toy** | **Product - Sandwiches** | **Product - Smoothie carton** |
| **Children can…**<br>**Technical knowledge and understanding**<br>• Understand and use pneumatic mechanisms.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Generate realistic and appropriate ideas and their own design criteria through discussion, focusing on the needs of the user.<br>• Use annotated sketches and prototypes to develop, model and communicate ideas.<br><br>**Making**<br>• Order the main stages of making.<br>• Select from and use appropriate tools with some accuracy to cut and join materials and components such as tubing, syringes and balloons.<br>• Select from and use finishing techniques suitable for the product they are creating.<br><br>**Evaluating**<br>• Investigate and analyse books, videos and products with pneumatic mechanisms. | **Children can…**<br>**Technical knowledge and understanding**<br>• Know how to use appropriate equipment and utensils to prepare and combine food.<br>• Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.<br>• Know and use relevant technical and sensory vocabulary appropriately.<br><br>**Designing**<br>• 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.<br>• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.<br><br>**Making**<br>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.<br>• Select and use appropriate utensils and | **Children can…**<br>**Technical knowledge and understanding**<br>• Develop and use knowledge of nets of cubes and cuboids and, where appropriate, more complex 3D shapes.<br>• Develop and use knowledge of how to construct strong, stiff shell structures.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Generate realistic ideas and design criteria collaboratively through discussion, focusing on the needs of the user and the functional and aesthetic purposes of the product.<br>• Develop ideas through the analysis of existing shell structures and use computer-aided design to model and communicate ideas.<br><br>**Making**<br>• Plan the order of the main stages of making.<br>• Select and use appropriate tools and software to measure, mark out, cut, score, shape and assemble with some accuracy. |

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| • Evaluate their own products and ideas against criteria and user needs, as they design and make. | equipment to prepare and combine ingredients.<br>• Select from a range of ingredients to make appropriate food products, thinking about sensory characteristics.<br><br>**Evaluating**<br>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.<br>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. | • Explain their choice of materials according to functional properties and aesthetic qualities.<br>• Use computer-generated finishing techniques suitable for the product they are creating.<br><br>**Evaluating**<br>• Investigate and evaluate a range of shell structures including the materials, components and techniques that have been used.<br>• Test and evaluate their own products against design criteria and the intended user and purpose. |
| **Key vocabulary:**<br>components, fixing, attaching, tubing, syringe, plunger, split pin, paper fastener pneumatic system, input movement, process, output movement, control, compression, pressure, inflate, deflate, pump, seal, air-tight, linear, rotary, oscillating, reciprocating user, purpose, function, prototype, design criteria, innovative, appealing, design brief, research, evaluate, ideas, constraints, investigate | **Key vocabulary:**<br>name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested, healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations | **Key vocabulary:**<br>shell structure, three-dimensional (3-D) shape, net, cube, cuboid, prism, vertex, edge, face, length, width, breadth, capacity marking out, scoring, shaping, tabs, adhesives, joining, assemble, accuracy, material, stiff, strong, reduce, reuse, recycle, corrugating, ribbing, laminating, font, lettering, text, graphics, decision, evaluating, design brief design criteria, innovative, prototype |
| **YEAR 4** | | |
| **Cooking and Nutrition**<br>**Focus – Healthy & varied diet** | **Textiles**<br>**Focus – 2D shape to 3D product** | **Electrical Systems**<br>**Focus – Simple circuits & switches (including programming & control)** |

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| Product - Greek Salad | Product - Roman Purse/Pouch | Product - Hands free Headlamp |
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| **Children can…**<br>**Technical knowledge and understanding**<br>• Know how to use appropriate equipment and utensils to prepare and combine food.<br>• Know about a range of fresh and processed ingredients appropriate for their product, and whether they are grown, reared or caught.<br>• Know and use relevant technical and sensory vocabulary appropriately.<br><br>**Designing**<br>• 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.<br>• Use annotated sketches and appropriate information and communication technology, such as web-based recipes, to develop and communicate ideas.<br><br>**Making**<br>• Plan the main stages of a recipe, listing ingredients, utensils and equipment.<br>• Select and use appropriate utensils and equipment to prepare and combine ingredients.<br>• Select from a range of ingredients to make | **Children can…**<br>**Technical knowledge and understanding**<br>• Know how to strengthen, stiffen and reinforce existing fabrics.<br>• Understand how to securely join two pieces of fabric together.<br>• Understand the need for patterns and seam allowances.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Generate realistic ideas through discussion and design criteria for an appealing, functional product fit for purpose and specific user/s.<br>• Produce annotated sketches, prototypes, final product sketches and pattern pieces.<br><br>**Making**<br>• Plan the main stages of making.<br>• Select and use a range of appropriate tools with some accuracy e.g. cutting, joining and finishing.<br>• Select fabrics and fastenings according to their functional characteristics e.g. strength, and aesthetic qualities e.g. pattern.<br><br>**Evaluating** | **Children can…**<br>**Technical knowledge and understanding**<br>• Understand and use computing to program and control products containing electrical systems, such as series circuits incorporating switches, bulbs and buzzers.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Gather information about users' needs and wants, and develop design criteria to inform the design of products that are fit for purpose.<br>• Generate, develop, model and communicate realistic ideas through discussion and, as appropriate, annotated sketches, cross-sectional and exploded diagrams.<br><br>**Making**<br>• Order the main stages of making.<br>• Select from and use tools and equipment to cut, shape, join and finish with some accuracy.<br>• Connect simple electrical components and a battery in a series circuit to achieve a functional outcome.<br>• Program a standalone control box, |

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| appropriate food products, thinking about sensory characteristics.<br><br>**Evaluating**<br>• Carry out sensory evaluations of a variety of ingredients and products. Record the evaluations using e.g. tables and simple graphs.<br>• Evaluate the ongoing work and the final product with reference to the design criteria and the views of others. | • Investigate a range of 3-D textile products relevant to the project.<br>• Test their product against the original design criteria and with the intended user.<br>• Take into account others' views.<br>• Understand how a key event/individual has influenced the development of the chosen product and/or fabric. | microcontroller or interface box to enhance the way the product works.<br><br>**Evaluating**<br>• Investigate and analyse a range of existing battery-powered products, including pre-programmed and programmable products.<br>• Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work. |
| **Key vocabulary:**<br>name of products, names of equipment, utensils, techniques and ingredients, texture, taste, sweet, sour, hot, spicy, appearance, smell, preference, greasy, moist, cook, fresh, savoury, hygienic, edible, grown, reared, caught, frozen, tinned, processed, seasonal, harvested healthy/varied diet, planning, design criteria, purpose, user, annotated sketch, sensory evaluations | **Key vocabulary:**<br>fabric, names of fabrics, fastening, compartment, zip, button, structure, finishing technique, strength, weakness, stiffening, templates, stitch, seam, seam allowance, user, purpose, design, model, evaluate, prototype, annotated sketch, functional, innovative, investigate, label, drawing, aesthetics, function, pattern pieces | **Key vocabulary:**<br>series circuit, fault, connection, toggle switch, push-to-make switch, push-to-break switch, battery, battery holder, light emitting diode (LED), bulb, bulb holder, USB cable, wire, insulator, conductor, crocodile clip, control, program, system, input device, output device, process, user, purpose, function, prototype, design criteria, innovative, appealing, design brief |
| **YEAR 5** | | |
| **Mechanical Systems**<br>**Focus – CAMS** | **Cooking and Nutrition**<br>**Focus – Celebrating Culture & Seasonality** | **Textiles**<br>**Focus – Combining different fabric shapes** |
| **Product - Child's Moving Toy** | **Product - Pizza** | **Product - Fabric Planet** |
| **Children can…**<br>**Technical knowledge and understanding**<br>• Understand that mechanical systems have | **Children can…**<br>**Technical knowledge and understanding**<br>• Know how to use utensils and equipment | **Children can…**<br>**Technical knowledge and understanding**<br>• A 3-D textile product can be made from a |

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| an input, process and an output.<br>• Understand how cams can be used to produce different types of movement and change the direction of movement.<br>•Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Generate innovative ideas by carrying out research using surveys, interviews, questionnaires and web-based resources.<br>• Develop a simple design specification to guide their thinking.<br>• Develop and communicate ideas through discussion, annotated drawings, exploded drawings and drawings from different views.<br><br>**Making**<br>• Produce detailed lists of tools, equipment and materials. Formulate step-by-step plans and, if appropriate, allocate tasks within a team.<br>• Select from and use a range of tools and equipment to make products that that are accurately assembled and well finished. Work within the constraints of time, resources and cost.<br><br>**Evaluating**<br>• Compare the final product to the original | including heat sources to prepare and cook food.<br>• Understand about seasonality in relation to food products and the source of different food products.<br>• Know and use relevant technical and sensory vocabulary.<br><br>**Designing**<br>• Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.<br>• Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.<br>• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.<br><br>**Making**<br>• Write a step-by-step recipe, including a list of ingredients, equipment and utensils<br>• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients.<br>• Make, decorate and present the food product appropriately for the intended user and purpose. | combination of accurately made pattern pieces, fabric shapes and different fabrics.<br>• Fabrics can be strengthened, stiffened and reinforced where appropriate.<br><br>**Designing**<br>• Generate innovative ideas by carrying out research including surveys, interviews and questionnaires.<br>• Develop, model and communicate ideas through talking, drawing, templates, mock-ups and prototypes and, where appropriate, computer-aided design.<br>• Design purposeful, functional, appealing products for the intended user that are fit for purpose based on a simple design specification.<br><br>**Making**<br>• Produce detailed lists of equipment and fabrics relevant to their tasks.<br>• Formulate step-by-step plans and, if appropriate, allocate tasks within a team.<br>• Select from and use a range of tools and equipment to make products that are accurately assembled and well finished. Work within the constraints of time, resources and cost.<br><br>**Evaluating** |

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| design specification.<br>• Test products with the intended user, where safe and practical, and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.<br>• Consider the views of others to improve their work.<br>• Investigate famous manufacturing and engineering companies relevant to the project. | **Evaluating**<br>• Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.<br>• Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.<br>• Understand how key chefs have influenced eating habits to promote varied and healthy diets. | • Investigate and analyse textile products linked to their final product.<br>• Compare the final product to the original design specification.<br>• Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.<br>• Consider the views of others to improve their work. |
| **Key vocabulary:**<br>cam, snail cam, off-centre cam, peg cam, pear shaped cam, follower, axle, shaft, crank, handle, housing, framework, rotation, rotary motion, oscillating motion, reciprocating motion, annotated sketches, exploded diagrams, mechanical system, input movement, process, output movement design decisions, functionality, innovation, authentic, user, purpose, design, specification, design brief | **Key vocabulary:**<br>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, | **Key vocabulary:**<br>seam, seam allowance, wadding, reinforce, right side, wrong side, hem, template, pattern pieces, name of textiles and fastenings used, pins, needles, thread, pinking shears, fastenings, iron transfer paper, design criteria, annotate, design decisions, functionality, innovation, authentic, user, purpose, evaluate, mock-up, prototype |
| **YEAR 6** | | |
| **Cooking and Nutrition**<br>**Focus – Celebrating Culture & Seasonality** | **Structures**<br>**Focus – Frame structures (including computer-aided design)** | **Electrical systems**<br>**Focus – More complex switches and circuits (including programming, monitoring and control)** |
| **Product – Leek and Potato soup** | **Product – Wooden Framed Shelters** | **Product – Electrical Board Game** |

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| **Children can…**<br>**Technical knowledge and understanding**<br>• Know how to use utensils and equipment including heat sources to prepare and cook food.<br>• Understand about seasonality in relation to food products and the source of different food products.<br>• Know and use relevant technical and sensory vocabulary.<br><br>**Designing**<br>• Generate innovative ideas through research and discussion with peers and adults to develop a design brief and criteria for a design specification.<br>• Explore a range of initial ideas, and make design decisions to develop a final product linked to user and purpose.<br>• Use words, annotated sketches and information and communication technology as appropriate to develop and communicate ideas.<br><br>**Making**<br>• Write a step-by-step recipe, including a list of ingredients, equipment and utensils<br>• Select and use appropriate utensils and equipment accurately to measure and combine appropriate ingredients. | **Children can…**<br>**Technical knowledge and understanding**<br>• Understand how to strengthen, stiffen and reinforce 3-D frameworks.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• Carry out research into user needs and existing products, using surveys, interviews, questionnaires and web-based resources.<br>• Develop a simple design specification to guide the development of their ideas and products, taking account of constraints including time, resources and cost.<br>• Generate, develop and model innovative ideas, through discussion, prototypes and annotated sketches.<br>Develop ideas through the use computer-aided design to model and communicate ideas.<br><br>**Making**<br>• Formulate a clear plan, including a step-by-step list of what needs to be done and lists of resources to be used.<br>• Competently select from and use appropriate tools to accurately measure, mark out, cut, shape and join construction materials to make frameworks. | **Children can…**<br>**Technical knowledge and understanding**<br>• Understand and use electrical systems in their products.<br>• Apply their understanding of computing to program, monitor and control their products.<br>• Know and use technical vocabulary relevant to the project.<br><br>**Designing**<br>• 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.<br>• Generate and develop innovative ideas and share and clarify these through discussion.<br>• Communicate ideas through annotated sketches, pictorial representations of electrical circuits or circuit diagrams.<br><br>**Making**<br>• Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.<br>• Competently select and accurately assemble materials, and securely connect electrical components to produce a reliable, functional product.<br>• Create and modify a computer control |

# Curriculum Progression for Design and Technology

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| • Make, decorate and present the food product appropriately for the intended user and purpose.<br><br>**Evaluating**<br>• Carry out sensory evaluations of a range of relevant products and ingredients. Record the evaluations using e.g. tables/graphs/charts such as star diagrams.<br>• Evaluate the final product with reference back to the design brief and design specification, taking into account the views of others when identifying improvements.<br>• Understand how key chefs have influenced eating habits to promote varied and healthy diets. | • Use finishing and decorative techniques suitable for the product they are designing and making.<br><br>**Evaluating**<br>• Investigate and evaluate a range of existing frame structures.<br>• Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development, and carrying out appropriate tests.<br>• Research key events and individuals relevant to frame structures. | program to enable an electrical product to work automatically in response to changes in the environment.<br><br>**Evaluating**<br>• Continually evaluate and modify the working features of the product to match the initial design specification.<br>• Test the system to demonstrate its effectiveness for the intended user and purpose.<br>• Investigate famous inventors who developed ground-breaking electrical systems and components. |
| **Key vocabulary:**<br>ingredients, yeast, dough, bran, flour, wholemeal, unleavened, baking soda, spice, herbs, fat, sugar, carbohydrate, protein, vitamins, nutrients, nutrition, healthy, varied, gluten, dairy, allergy, intolerance, savoury, source, seasonality, utensils, combine, fold, knead, stir, pour, mix, rubbing in, whisk, beat, roll out, shape, sprinkle, crumble, design specification, innovative, research, evaluate, design brief | **Key vocabulary:**<br>frame structure, stiffen, strengthen, reinforce, triangulation, stability, shape, join, temporary, permanent, design brief, design specification, prototype, annotated sketch, purpose, user, innovation, research, functional | **Key vocabulary:**<br>series circuit, parallel circuit, names of switches and components, input device, output device, system, monitor, control, program, flowchart, function, innovative, design specification, design brief, user, purpose |