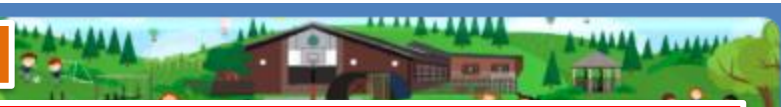
# DT Progression Grid

Developing, planning and communicating ideas | Food and Nutrition | Evaluating processes and products | Working with tools, equipment, materials and components to make quality products



| EARLY YEARS | KEY STAGE 1 | | LOWER KEY STAGE 2 | | UPPER KEY STAGE 2 | |
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| Reception | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Year 6 |

## FROG

## Developing, planning and communicating ideas

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| **ELG**<br>Children at the expected level of development will:<br>- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;<br>- Share their creations, explaining the process they have used | **NC objective**<br>**Key stage 1**<br>Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to:<br>**Design**<br>- design purposeful, functional, appealing products for themselves and other users based on design criteria<br>- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology<br>**Technical knowledge**<br>- build structures, exploring how they can be made stronger, stiffer and more stable<br>- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products | | **NC objective**<br>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:<br>**Design**<br>-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<br>-generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br>**Technical knowledge**<br>-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]<br>-understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]<br>- apply their understanding of computing to program, monitor and control their products. | | **NC objective**<br>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:<br>**Design**<br>-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<br>-generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design<br>**Technical knowledge**<br>-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]<br>-understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]<br>- apply their understanding of computing to program, monitor and control their products. | |
| Explain what they are making and which materials they are using. | Begin to draw on their own experience to help generate ideas and research conducted on criteria. | Start to generate ideas by drawing on their own and other people's experiences. | With growing confidence, generate ideas for an item, considering its purpose and the user/s. | Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science. | Start to generate, develop, model and communicate their ideas through discussion, annotated | Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern |

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| | | | | | sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD. | pieces and CAD. |
| Select materials from a limited range that will meet a simple design criteria e.g., shiny. | Begin to understand the development of existing products: What they are for, how they work, materials used. | Begin to develop their design ideas through discussion, observation, drawing and modelling. | Start to order the main stages of making a product. | Confidently make labelled drawings from different views showing specific features. | Begin to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. | Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. |
| Select and name the tools needed to work the materials e.g., scissors for paper. | Start to suggest ideas and explain what they are going to do. | Identify a purpose for what they intend to design and make. | Identify a purpose and establish criteria for a successful product. | Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail. | With growing confidence apply a range of finishing techniques, including those from art and design | Accurately apply a range of finishing techniques, including those from art and design. |
| Explore ideas by rearranging materials. | Understand how to identify a target group for what they intend to design and make based on a design criteria. | Understand how to identify a target group for what they intend to design and make based on a design criteria. | Understand how well products have been designed, made, what materials have been used and the construction technique. | Identify the strengths and areas for development in their ideas and products. | Draw up a specification for their design-link with Mathematics and Science. | Draw up a specification for their design-link with Mathematics and Science. |
| Describe simple models or drawings of ideas and intentions. | Begin to develop their ideas through talk and drawings. Make templates and mock ups of their ideas in card and paper or using ICT. | Develop their ideas through talk and drawings and label parts. Make templates and mock ups of their ideas in card and paper or using ICT. | Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. | When planning consider the views of others, including intended users, to improve their work. | Use results of investigations, information sources, including ICT when developing design ideas. | Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail. |
| Discuss their work as it progresses. | | | Start to understand whether products can be recycled or reused. | Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. | With growing confidence select appropriate materials, tools and techniques. | Identify the strengths and areas for development in their ideas and products. |

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| | | Know to make drawings with labels when designing. | When planning, explain their choice of materials and components according to function and aesthetic. | Start to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. | Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose. |
| | | When planning explain their choice of materials and components including function and aesthetics. | | | |

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Food and Nutrition

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| | 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.<br>Pupils should be taught to:<br>Key stage 1<br>-use the basic principles of a healthy and varied diet to prepare dishes<br>-understand where food comes from. | | 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.<br>understand and apply the principles of a healthy and varied diet<br>- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques<br>- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. | | 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.<br>understand and apply the principles of a healthy and varied diet<br>- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques<br>- understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed. | |
| Begin to develop a food vocabulary using taste, smell, texture and feel. | Begin to understand that all food comes from plants or animals. | Understand that all food comes from plants or animals. | Start to know 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. | Understand 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. | Understand 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.<br>are needed for health | Know 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. |
| Explore familiar food products e.g. fruit and vegetables. | Explore the understanding that food has to be farmed, grown elsewhere (e.g., home) or caught. | Know that food has to be farmed, grown elsewhere (e.g., home) or caught. | Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. | Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. | Begin to understand that seasons may affect the food available. | Understand that seasons may affect the food available. |
| Stir, spread, knead and shape a range of food and ingredients. | Start to understand how to name and sort foods into the five groups in 'The Eat well plate' | Understand how to name and sort foods into the five groups in 'The Eat well plate' | Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | Understand how food is processed into ingredients that can be eaten or used in cooking. | Understand how food is processed into ingredients that can be eaten or used in cooking. |

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| Begin to work safely and hygienically. | Begin to understand that everyone should eat at least five portions of fruit and vegetables every day. | Know that everyone should eat at least five portions of fruit and vegetables every day. | Start to understand that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' | Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate' | Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source | Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source |
| Start to think about the need for a variety of foods in a diet. | Know how to prepare simple dishes safely and hygienically, without using a heat source. | Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source. | Begin to know that to be active and healthy, food and drink are needed to provide energy for the body | Know that to be active and healthy, food and drink are needed to provide energy for the body | Start to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. | Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. |
| Measure and weigh food items, no - statutory measures e.g. spoons, cups. | Know how to use techniques such as cutting, peeling and grating. | Demonstrate how to use techniques such as cutting, peeling and grating. | | | Begin to understand that different food and drink contain different substances – nutrients, water and fibre – that are needed for health | Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health |

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Evaluating processes and products

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| | NC Objectives<br>Evaluate<br>• explore and evaluate a range of existing products<br>•evaluate their ideas and products against design criteria | | NC Objectives<br>Evaluate<br>• investigate and analyse a range of existing products<br>• evaluate their ideas and products against their own design criteria and consider the views of others to improve their work<br>understand how key events and individuals in design and technology have helped shape the world | | | |
| Say what they like and do not like about items they have made and attempt to say why. | Start to evaluate their product by discussing how well it works in relation to the purpose (design criteria). | Evaluate their work against their design criteria. | Start to evaluate their product against original design criteria e.g., how well it meets its intended purpose | Evaluate their products carrying out appropriate tests. | Start to evaluate a product against the original design specification and by carrying out tests. | Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. |
| Begin to talk about their designs as they develop and identify good and bad points. | When looking at existing products explain what they like and dislike about Products and why. | Look at a range of existing products explain what they like and dislike about Products and why. | Begin to disassemble and evaluate familiar products and consider the views of others to improve them. | Start to their work both during and at the end of the assignment. | Evaluate their work both during and at the end of the assignment. | Evaluate their work both during and at the end of the assignment. |
| Start to talk about changes made during the making process. | Begin to evaluate their products as they are developed, identifying strengths and possible changes they might make. | Start to evaluate their products as they are developed, identifying strengths and possible changes they might make. | Evaluate the key designs of individuals in design and technology has helped shape the world. | Be able to disassemble and evaluate familiar products and consider the views of others to improve them. | Begin to evaluate it personally and seek evaluation from others. | Record their evaluations using drawings with labels. |
| Discuss how closely their finished products meet their design criteria. | | With confidence talk about their ideas, saying what they like and dislike about them. | | Evaluate the key designs of individuals in design and technology have helped shape the world. | Evaluate the key designs of individuals in design and technology has helped shape the world. | Evaluate against their original criteria and suggest ways that their product could be improved. |
| | | | | | | Evaluate the key designs of individuals in design and technology has helped shape the world. |

**Working with tools, equipment, materials and components to make quality products**

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| **NC objective**<br>Children at the expected level of development will:<br>- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function;<br>- Share their creations, explaining the process they have used | **NC objective**<br>Make<br>- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]<br>- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics | | **NC objective**<br>Make<br>- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately<br>- 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 | | **NC objective**<br>Make<br>- select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately<br>- 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 | |
| **I can…**<br>Begin to create their design using basic techniques. | **I can…**<br>Begin to make their design using appropriate techniques. | **I can…**<br>Begin to select tools and materials; use correct vocabulary to name and describe them. | **I can…**<br>Select a wider range of tools and techniques for making their product i.e. construction materials and kits, textiles, food ingredients, mechanical components and electrical components. | **I can…**<br>Select a wider range of tools and techniques for making their product safely. | **I can…**<br>Select appropriate materials, tools and techniques e.g., cutting, shaping, joining and finishing, accurately. | **I can…**<br>Confidently select appropriate tools, materials, components and techniques and use them. |
| Start to build structures, joining components together. | Begin to build structures, exploring how they can be made stronger, stiffer and more stable. | Build structures, exploring how they can be made stronger, stiffer and more stable. | Explain their choice of tools and equipment in relation to the skills and techniques they will be using. | Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. | 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. | Use tools safely and accurately. |

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| Look at simple hinges, wheels and axles. Use technical vocabulary when appropriate. | Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. | With help measure, cut and score with some accuracy. | Start to understand that mechanical and electrical systems have an input, process and output. | Start to join and combine materials and components accurately in temporary and permanent ways. | Understand how mechanical systems such as cams or pulleys or gears create movement. | Assemble components to make working models. |
| Begin to use scissors to cut straight and curved edges and hole pinches to punch holes. | With help measure, mark out, cut and shape a range of materials. | Learn to use hand tools safely and appropriately. | Start to understand that mechanical systems such as levers and linkages or pneumatic systems create movement. | Know how mechanical systems such as cams or pulleys or gears create movement. | Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. | Aim to make and to achieve a quality product. |
| Explore using/ holding basic tools such as a saw or hammer. | Explore using tools e.g. scissors and a hole punch safely. | Start to assemble, join and combine materials in order to make a product. | Know how simple electrical circuits and components can be used to create functional products. | Understand how more complex electrical circuits and components can be used to create functional products. | Understand that mechanical and electrical systems have an input, process and output. | With confidence pin, sew and stitch materials together to create a product. |
| Use adhesives to join material. | Begin to assemble, join and combine materials and components together using a variety of temporary methods e.g. glues or masking tape. | Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques. | Measure, mark out, cut, score and assemble components with more accuracy. | Continue to learn how to program a computer to monitor changes in the environment and control their products. | Begin to measure and mark out more accurately. | Demonstrate when make modifications as they go along. |
| | Begin to use simple finishing techniques to improve the appearance of their product. | Start to choose and use appropriate finishing techniques based on own ideas. | Start to work safely and accurately with a range of simple tools. | Understand how to reinforce and strengthen a 3D framework. | Demonstrate how to use skills in using different tools and equipment safely and accurately | Construct products using permanent joining techniques. |
| | | | Start to think about their ideas as they make progress and be willing to change things if this helps | Now sew using a range of different stitches, to weave and knit. | With growing confidence cut and join with accuracy to ensure a good- | Understand how mechanical systems such as cams or |

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| | | | them to improve their work. | | quality finish to the product | pulleys or gears create movement. |
| | | | Start to measure, tape or pin, cut and join fabric with some accuracy. | Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy. | Weigh and measure accurately (time, dry ingredients, liquids). | Know how more complex electrical circuits and components can be used to create functional products and how to program a computer to monitor changes in the environment and control their products. |
| | | | | Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. | Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. | Know how to reinforce and strengthen a 3D framework |
| | | | | | | Understand that mechanical and electrical systems have an input, process and output |
| | | | | | | Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT. |