



Design and Technology Skills Progression

St Margaret Clitherow Academy

Design & Technology: Foundation

Expressive Arts and Design (Exploring and Using Media and Materials)	Physical Development (Moving and Handling)	Expressive Arts and Design (Being Imaginative)	Cooking and Nutrition
Children safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Children handle equipment and tools effectively, including pencils for writing.	Children use what they have learnt about media and materials, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, role play and stories.	Develop a food vocabulary using taste, smell, texture and feel. They start to think about the need for a variety of foods in a diet.

Skills Progression in Foundation

Year Group	Design [Developing, planning and communicating ideas]	Make [Working with tools, equipment, materials and components to make quality products]	Evaluate [Assessing processes own / existing products]	Technical Knowledge	Food and Nutrition
F	Explain to an adult what they are making and which materials they are using. - Select materials from a 'limited range' that will meet a simple design criteria [for example, shiny]. - Select and name the tools needed to work the materials [for example, scissors for paper]. - Explore ideas by rearranging materials - Describe simple models or drawings of ideas and intentions. - Discuss their work as it progresses.	Begin to create their design using basic techniques. - Start to build structures, joining components together. - Begin to look at simple hinges, wheels and axles. [To use technical vocabulary when appropriate]. - Begin to use scissors to cut straight and curved edges and hole punches to punch holes. - Explore using / holding basic tools such as a saw or hammer. - Use adhesives to join materials.	Begin to explain what they like and do not like about items they have made and attempt to say why. - Begin to talk about their designs as they develop, identifying good and bad points. - Start to talk about changes made during the making process. - Discuss how their finished products meet their initial design criteria.	To know how to use a range of tools [for example, scissors, hole punch, stapler, woodworking tools, rolling pins, pastry cutters etc.] - To have basic hygiene awareness.	Begin to develop a food vocabulary using taste, smell, texture and feel. - Explore familiar food products [for example, fruit and vegetables]. - Stir, spread, knead and shape a range of food and ingredients. - Begin to work safely and hygienically. - Begin to think about the variety of foods in a diet. - Measure and weigh food items using non – statutory measures [for example, spoons and cups].

Design & Technology: Key Stage 1				
Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
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.	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.	Explore and evaluate a range of existing products. Evaluate their ideas and products against design criteria.	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.	Use the basic principles of a healthy and varied diet to prepare dishes. Understand where food comes from.

Skills Progression in Key Stage 1					
Year Group	Design [Developing, planning and communicating ideas]	Make [Working with tools, equipment, materials and components to make quality products]	Evaluate [Assessing processes own / existing products]	Technical Knowledge Y1/2	Food and Nutrition Y1/2
Yr1	Begin to use own ideas to design something and describe how their own idea works. - Begin to understand how existing products have been developed [for example, what they are for, how they work, materials used]. - Start to suggest ideas and explain what they intend to do. - Begin to develop their ideas through both talk and drawings. Make templates of their ideas in card, paper or using ICT.	- Begin to make their design using appropriate resources and tools. - Begin to make a product which moves. - Begin to build structures, exploring how they can be made stronger, stiffer and more stable. With help – measure, mark out, cut and shape a range of different materials. - Begin to use simple techniques to improve the appearance of their product. - Explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products. - Begin to assemble, join and combine materials together using a variety of temporary methods [for example, glue or masking tape].	Describe how their products works. - Start to evaluate their product by discussing what works well and not so well [in relation to design criteria] - Identify possible changes they might make. - When looking at existing products explain what they like and dislike about products and why.	To know that levers and sliders are mechanisms and can make things move. To know about the movement of simple mechanisms [such as levers, sliders, wheels and axles]. Use the vocabulary: <i>up, down, left, right, vertical and horizontal to describe movement</i>. Identify what mechanism makes a toy or vehicle roll forwards. To know that for a wheel to move it must be attached to an axle. How to make freestanding structures stronger, stiffer and more stable. To know the difference between fruits and vegetables. To describe and group fruits by texture and taste.	Begin to understand that all food comes from plants or animals. - Explore the understanding that food has to be farmed or grown elsewhere or caught. Begin to understand how to name and sort groups into the five groups [fruit & vegetables, carbohydrates, protein, dairy & oils and spreads https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/] Begin to understand that everyone should eat at least five portions of fruit and vegetables every day. - Prepare simple dishes safely and hygienically, without using a heat source. - Know how to use techniques such as cutting, peeling and grating. Weigh ingredients to use in a recipe. Describe the ingredients used when preparing dishes [fruit or vegetable]
Yr2	Start to generate ideas by drawing on their own and others experience. - Develop design ideas through discussion, observation, drawing and modelling. - Identify the purpose for what they intend to design and make. - Understand how to identify a 'target group' for what they intend to design and make [set design criteria]. - Develop their ideas through talk and drawings and label parts. Make templates of ideas using card, paper or ICT.	Begin to select tools and materials; using the correct vocabulary to name and describe - Build structures, exploring how they can be made stronger, stiffer and more stable. With help, measure, cut and score materials with some accuracy. - Learn to use hand tools safely and appropriately. - Start to assemble, join and combine materials in order to make a product. - Cut, shape and join fabric to make a simple product [use basic sewing techniques]. - Choose and use appropriate finishing techniques [based on own ideas].	Evaluate their work against design criteria. - Look at a range of existing products, explain what they like and dislike about products and why. - Evaluate the development process of their design identifying strengths and possible changes they might want to make. - Talk about their ideas [what they like and dislike].		

Design & Technology: Key Stage 2				
Design	Make	Evaluate	Technical Knowledge	Cooking and Nutrition
Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups. Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.	Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately. Select from and use a wider range of materials and components, including construction materials, textiles and ingredients, according to their functional properties and aesthetic qualities.	Investigate and analyse a range of existing products, evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Understand how key events and individuals in design and technology have helped shaped the world.	Apply their understanding of how to strengthen, stiffen and reinforce more complex structures. Understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages]. Understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]. Apply their understanding of computing to program, monitor and control their products.	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.

Skills Progression in Lower Key Stage 2					
Year Group	Design [Developing, planning and communicating ideas]	Make [Working with tools, equipment, materials and components to make quality products]	Evaluate [Assessing processes own / existing products]	Technical Knowledge Y3/4	Food and Nutrition Y3/4
Yr3	- With growing confidence, generate ideas for an item, taking into account its purpose and the user/s. Identify a purpose and establish criteria for a successful product. - Start to order the main stages of making a product. - Know to make drawings with labels when designing. - When designing consider choice of materials and components [including function and aesthetics]. - Choose a material for both its suitability and its appearance. Begin to understand whether products can be recycled or reused. Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. Research how well products have been designed, made, what materials have been used and the construction technique.	Follow a step-by-step plan, choosing a wide range of tools and techniques for making their product [construction materials, textiles, food ingredients, mechanical components and electrical components]. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. - Measure, mark out, cut, score and assemble components with more accuracy. Start to work safely and accurately with a range of simple tools. Start to measure, tape or pin, cut and join fabric with some accuracy. Think about their ideas as they make progress and be willing to change things if it helps them to improve their work.	- Start to evaluate their product against the original design criteria [for example, how well it meets its intended purpose]. Explain how to improve a finished model. - Know why a model has, or has not, been successful. Evaluate key designs of individuals in design and technology and how it has helped shape the world.	To know how mechanical systems such as levers and linkages create movement. To know how simple electrical circuits and components can be used to create functional products. How to make strong, stiff shell structures. Start to understand that electrical systems have an input and output process. To sew using a range of different stitches.	Start to know that food is grown [tomatoes, wheat and potatoes], reared [pigs and chickens] and caught [fish] in the UK, Europe and the wider world. - Know when food is ready for harvesting. - Understand how to prepare and cook a variety of dishes safely and hygienically [where appropriate the use of a heat source]. Begin to understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Discuss which food is healthy and which is not, that a healthy diet is made up from a variety and balance of different food and drink. Begin to know that to be active and healthy, food and drink are needed to provide energy for the body. Describe how food ingredients come together.

Yr4	• Start to generate ideas for an item, taking into account its purpose and the user/s. • When planning consider the views of others <i>[including intended users]</i> to improve their work. • Make labelled drawings from different views showing specific features. • Develop a clear idea of what has to be done, planning how to use materials, equipment and processes. • Persevere and adapt or use alternative methods when first attempts fail. • Identify the strengths and areas of development in their ideas and products. • When planning, explain choice of materials and components according to function and aesthetic. • Learn about <i>inventors, designers, engineers, chefs and manufacturers</i> who have developed ground-breaking products.	• Use a wide range of tools and techniques for making their product safely. • Select and know which tools to use for a particular task and show knowledge of handling the tool. • Start to join and combine materials and components accurately in both temporary and permanent ways. • Know how to measure accurately, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. • Explain their choice of material – explaining why it's likely to give the best outcome. •	• Evaluate and suggest improvements for design. • Evaluate products for both their purpose and appearance. • Explain how the original design has been improve <i>[against original design criteria]</i> • Be able to evaluate familiar products. • Evaluate key designs of individuals in design and technology and how it has helped shape the world.	• Weigh out ingredients and follow a given recipe to create a dish. • Bring a creative element to the food product being designed.
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Skills Progression in Upper Key Stage 2					
Year Group	Design <i>[Developing, planning and communicating ideas]</i>	Make <i>[Working with tools, equipment, materials and components to make quality products]</i>	Evaluate <i>[Assessing processes own / existing products]</i>	Technical Knowledge Y5/6	Food and Nutrition Y5/6
Yr5	• Begin to research by collecting information from a range of different sources to develop a design criteria. • Generate, develop, model and communicate ideas <i>[through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and pattern pieces]</i> • Draw up a specification for their design. • Produce a detailed step-by-step plan explaining how a product will appeal to a specific audience. • With growing confidence select appropriate materials, tools and techniques. • Begin to understand how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.	• Select appropriate materials, tools and techniques <i>[for example: cutting, shaping, joining and finishing accurately]</i>. • Make a prototype before making a final version. • Begin to measure and mark out accurately. • Select from and use a wider range of materials <i>[including, construction materials, textiles and ingredients]</i> according to functional and aesthetic qualities. • Cut and join with accuracy to ensure a good quality finish to the product. • Weigh and measure accurately <i>[time, dry ingredients and liquids]</i>. • Demonstrate how to use different tools and equipment safely and accurately.	• Evaluate and suggest improvements for design by carrying out tests. • Begin to seek evaluation from others. • Evaluate products for both their purpose and appearance. • Suggest alternative plan; outlining positive features and draw backs. • Evaluate key designs of individuals in design and technology and how it has helped shape the world.	• To know mechanical systems such as pulleys or gears create movement. • To know how more complex electrical circuits and components can be used to create functional products <i>[switches, bulbs, buzzers and motors]</i>. • Understand that electrical systems have an input and output process. • To know which tool to use for a specific practical tasks. • To know how to use any tool accurately and safely. • To know what each tool is used for.	• Know how to prepare and cook a variety of dishes safely and hygienically <i>[including where appropriate, the use of a heat source]</i>. • Know how to prepare a meal by collecting the ingredients to begin with. • Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. • Begin to understand that different food and drink contain different substances <i>[nutrients, water and fibre – needed for health]</i>. • Begin to understand that seasons may affect the food available. • Know which season various foods are available for harvesting. • Explain how food ingredients should be stored and give reasons.

Yr6	• Generate, develop, model and communicate ideas <i>[through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes and pattern pieces]</i> • Draw up a specification for their design. • Use market research to develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose. • Plan the order of their work, choosing appropriate materials, tools and techniques. • Follow and refine original plans if first attempts fail. • To know how much products cost to make, how sustainable and innovative they are and impact products have beyond their intended purpose. • Identify the strengths and areas for development in their ideas and products. • Show that culture and society is considered in plans and designs. • Design a product that requires pulleys or gears.	• Confidently select, tools and techniques <i>[for example: cutting, shaping, joining and finishing accurately]</i>. • Make modifications as you go along. • Accurately apply a range of finishing techniques. • Weigh and measure accurately <i>[time, dry ingredients and liquids]</i>.	• Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. • Record their evaluations using drawings with labels. • Evaluate against original design criteria. • Explain how products should be stored and give reasons. • Evaluate key designs of individuals in design and technology and how it has helped shape the world.		• Work within a budget to create a meal. • Understand the difference between a savoury dish and a sweet dish.
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