Skills Progressions – Design Technology

Design Technology (DT) is taught as part of our topic based approach to learning. This skills progression document supports teachers when planning age appropriate learning for DT.

	Design	Make	Evaluate
Spring Class	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.	Show good co-ordination in large and small movements. Handle equipment and tools effectively. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Express themselves effectively. Develop their own narratives and explanations by connecting ideas or events.
Summer Class	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. Describe what their products are for. Say how their products will work. Say how they will make their products suitable for their intended users. Use simple design criteria to help develop their ideas. Use knowledge of existing products to help come up with ideas. Model ideas by exploring materials, components and construction kits and by making templates and mock-ups.	Plan by suggesting what to do next. Select from a range of tools and equipment, explaining their choices. Select from a range of materials and components according to their characteristics. Follow procedures for safety and hygiene. Use a range of materials and components, including construction materials and kits, textiles, food ingredients and mechanical components. Measure, mark out, cut and shape materials and components. Assemble, join and combine materials and components. Use finishing techniques, including those from art and design.	Talk about their design ideas and what they are making. Make judgements about their products and ideas against design criteria. Suggest how their products could be improved. Evaluate existing products considering: *what products are, *who products are for, *what products are for, *how products are used, *where products might be used, *what materials products are made from.
Autumn Class	Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. Explain how particular parts of their products work.	Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Explain their choice of materials and components according to functional properties and aesthetic qualities. Order the main stages of making.	Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Use their design criteria to evaluate their completed products. Evaluate existing products considering:

	Gather information about the needs and wants of particular individuals and groups and use these to inform their ideas. Develop their own design criteria and use these to inform their ideas. Model their ideas using prototypes and pattern pieces. Use annotated sketches, cross-sectional drawings and exploded diagrams to develop and communicate their ideas. Use computer-aided design to develop and communicate their ideas. Generate realistic ideas, focusing on the needs of the user. Make design decisions that take account of the availability of resources.	Follow procedures for safety and hygiene. Use a wide range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Measure, mark out, cut and shape materials and components with some accuracy. Assemble, join and combine materials and components with some accuracy. Refer to their design criteria as they design and make. Apply a range of finishing techniques, including those from art and design, with some accuracy.	*how well products have been designed, *how well products have been made, *why materials have been chosen, *what methods of construction have been used, *how well products work, *how well products achieve their purposes, *how well products meet user needs and wants, *who designed and made the products, *where products were designed and made, *when products were designed and made, *whether products can be recycled or reused.
Winter Class	Work confidently within a range of contexts, such as the home, school, leisure, culture, enterprise, industry and the wider environment. Indicate the design features of their products that will appeal to intended users. Explain how particular parts of their products work. Carry out research, using surveys, interviews, questionnaires and web-based resources. Identify the needs, wants, preferences and values of particular individuals and groups. Develop a simple design specification to guide their thinking. Model their ideas using prototypes and pattern pieces. Use computer-aided design to develop and communicate their ideas. Generate innovative ideas, drawing on research. Make design decisions, taking account of constraints such as time, resources and cost.	Select tools and equipment suitable for the task. Explain their choice of tools and equipment in relation to the skills and techniques they will be using. Explain their choice of materials and components according to functional properties and aesthetic qualities. Produce appropriate lists of tools, equipment and materials that they need. Formulate step-by-step plans as a guide to making. Follow procedures for safety and hygiene. Use a wide range of materials and components, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components. Accurately measure, mark out, cut and shape materials and components. Accurately assemble, join and combine materials and components.	Identify the strengths and areas for development in their ideas and products. Consider the views of others, including intended users, to improve their work. Critically evaluate the quality of the design, manufacture and fitness for purpose of their products as they design and make. Evaluate their ideas and products against their original design specification. Investigate and analyse existing products considering: *how well products have been designed, *how well products have been made, *why materials have been chosen, *what methods of construction have been used, *how well products work, *how well products achieve their purposes, *how well products meet user needs and wants, *how much products cost to make, *how innovative products are,

		Accurately apply a range of finishing techniques, including those from art and design. Use techniques that involve a number of steps. Demonstrate resourcefulness when tackling practical problems.	*how sustainable the materials in products are *what impact products have beyond their intended purpose.

	Technical Knowledge	Cooking	Key Events and Individuals
Spring Class	Follow instructions involving several ideas or actions.	Know the importance for good health of a healthy diet.	
Summer Class	Describe the working characteristics of materials and components. Explore the movement of simple mechanisms such as levers, sliders, wheels and axles. Explain how freestanding structures can be made stronger, stiffer and more stable. Use the correct technical vocabulary for the projects they are undertaking.	Explain that food has to be farmed, grown elsewhere (e.g. home) or caught. Name and sort foods into the five groups. Know 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. Use techniques such as cutting, peeling and grating. Explain that food ingredients should be combined according to their sensory characteristics.	
Autumn Class	Use learning from science and maths to help design and make products that work. Explain that materials have both functional properties and aesthetic qualities. Explain that materials can be combined and mixed to create more useful characteristics. Use mechanical systems such as levers and linkages or pneumatic systems to create movement. Explain that mechanical and electrical systems have an input, process and output.	Explain 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. Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.	Research inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. Describe and explain the impact their products have had on the world.

		Explain that a healthy diet is made up from a variety and balance of different foods and drinks.	
Winter Class	Use learning from science and maths to help design and make products that work. Explain that materials have both functional properties and aesthetic qualities and use this knowledge when designing products. Use their knowledge of how materials can be combined and mixed to create more useful characteristics when designing products. Use their knowledge of mechanical and electrical systems having an input, process and output when designing products. Use mechanical systems such as cams or pulleys or gears to create desired movement. Effectively use electrical circuits and components to create functional products. Program a computer to produce a desired effect. Demonstrate how to reinforce and strengthen a 3D framework effectively. Make 3D textiles product from a combination of complex fabric shapes. Know that a recipe can be adapted a by adding or substituting one or more ingredients and discuss the effect on the final product. Use the correct technical vocabulary for the projects they are undertaking.	Explain 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. Explain that seasons may affect the food available and give examples. Prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. Adapted recipes to change the appearance, taste, texture and aroma. Explain that different foods contain different substances - nutrients, water and fibre - that are needed for health.	Research inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products. Compare the impact their products have had on the world.