

Progression Grid

Summercourt Academy **DT**

*In addition, please see EYFS Progression grids.



Key DT skills

Design: Make appropriate suggestions for the appearance and materials for an item, consider how it will be made.

Make: Choosing and using the appropriate tools, equipment and resources to make **high quality** prototypes and products **following the design**.

Evaluate: Critique, evaluate and test ideas and products, suggesting ideas for improvements and explaining how the product is suitable for purpose.

Technical knowledge: Use and apply knowledge of materials, fixings and linkages to reinforce structures and build models with moving parts.

Food and nutrition: Understand the principles of nutrition and healthy eating, use basic techniques for food preparation and cooking.

Areas to be covered: food, textiles, construction, technological developments. **These should incorporate:** health & safety, design, electronics & electricals, mechanics & engineering, tools & equipment.

Design and technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

	KS1	National Curriculum end of KS1 expectations.	LKS2	UKS2	National Curriculum end of KS2 expectations.
Food and Nutrition	<ul style="list-style-type: none"> *To show understanding of where food comes from (plants and animals). *To know that food has been farmed, grown elsewhere or caught. * To know the 5 groups of food in The Eatwell plate. *To name and sort foods into the Groups of The Eatwell plate. *To show understanding of how to prepare food safely and hygienically (without a heat source). * To prepare and make dishes using a variety of tools and techniques. 	<ul style="list-style-type: none"> *To use the basic principles of a healthy and varied diet to prepare dishes. *To understand where food comes from. 	<ul style="list-style-type: none"> * To begin to understand food comes from the UK and the wider world. * To think about how plants are grown and used in cooking. * To begin to understand how a variety of ingredients are grown, reared, caught, and processed. * To explain how different/varied foods/drink are needed for a healthy body (as depicted in The Eatwell plate). * To understand the 	<ul style="list-style-type: none"> *To understand the seasonality of food. *To know and name where and how a variety of ingredients are grown, reared, caught, and processed in the UK, Europe and the wider world. * To describe how different foods/ingredients contain different substances that affect health. *To prepare and cook predominantly savoury dishes safely and hygienically (using heat source where appropriate). 	<ul style="list-style-type: none"> *To understand and apply the principles of a healthy and varied diet. *To prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. *To understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed).

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	(E.g., cutting, peeling, grating).		<p>need to be active and healthy and that food and drink provide energy for the body.</p> <p>* To prepare and cook predominantly savoury dishes (using a heat source where appropriate).</p> <p>*To safely use a variety of kitchen tools and techniques to prepare and cook food. (E.g., kneading, chopping, slicing, spreading).</p>	<p>*To show confidence in using a range of tools and techniques (E.g., peeling, chopping, kneading, slicing, grating, mixing, baking).</p>	
Design	<p>*To use knowledge of existing products to produce ideas.</p> <p>* To use own ideas by drawing on their own experiences.</p> <p>*To explore and model ideas by using templates and mock ups.</p> <p>*To design something purposeful, functional, and appealing following simple design criteria.</p> <p>*To be able to communicate their design using pictures, words, models, templates, ICT (where appropriate).</p> <p>*To explain purpose of product, how it will work and how it will be suitable for the user.</p> <p>*To develop a simple plan taking into</p>	<p>*To design purposeful, functional, appealing products for themselves and other users based on design criteria.</p> <p>*To generate, develop, model, and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communications technology.</p>	<p>*To use research (gather the needs and wants of particular individuals and groups)</p> <p>*To develop design criteria to inform their ideas.</p> <p>*To design a product that is functional and appealing.</p> <p>*To share and clarify ideas and plans through annotated drawings, patterns, models, and discussions.</p>	<p>*To use research (surveys, questionnaires, interviews, web resources) to inform plans and ideas.</p> <p>*To aim products at particular individuals and/or group by identifying needs, wants and preferences.</p> <p>*To use research to design something that is innovative, functional, appealing and fit for purpose.</p> <p>* To be able to describe the purpose, appealing design features and how products work.</p> <p>*To explain, share and clarify ideas and plans through a variety of ways including cross sectional and exploded diagrams, prototypes, pattern</p>	<p>*To 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.</p> <p>*To generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p>

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	<p>consideration the order of what needs to be carried out. *To select best materials and tools.</p>			<p>pieces and computer-aided design.</p>	
Make	<p>*To select and use tools/equipment according to their characteristics. *To explain choices for selection of materials and tools. *To measure, mark out, cut, and shape materials and components with support. *To assemble, join and combine materials and components. *To work in a safe and hygienic manner. *To use construction, textiles, ingredients, and other materials to make products. *To use finishing techniques including those from art and design.</p>	<p>*To select from and use a range of tools and equipment to perform practical tasks (for example cutting, shaping, joining, and finishing). *To select from and use a range of materials and components, including construction materials, textiles, and ingredients according to their characteristics.</p>	<p>*To select most appropriate tools, materials, components and techniques for a given task. *To explain choice of materials and components. * To create a simple plan (ordering the make steps of making). *To follow safety and hygiene procedures. *To accurately measure, make cuts, shapes, and holes. *To assemble, join and combine materials with some accuracy. *To use a simple circuit to illuminate or create movement in a product. *To use mechanical systems (e.g. levers, linkages and pneumatics) * To ensure products produced have a good finish that users would find attractive. *To use a range of stitches to join or decorate textiles.</p>	<p>*To select and use a wider range of materials (construction, textiles, ingredients) and components according to their suitability for the task – function and aesthetic qualities. * To be able to explain selection choices relating to function and aesthetic qualities. *To be able to create a list of tools, equipment and materials they will need. * To create a step by step plan as a guide to making. *To follow all safety and hygiene procedures and be able to explain why they are needed. *To create a product that uses both electrical and mechanical components. *To use mechanical systems (e.g. gears, pulleys, cams, levers and linkages) in their products. *To use a range of stitches to create a functional, attractive product. *To create a high-quality finish. * To generate resourcefulness when tackling practical problems.</p>	<p>*To select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately. *To select from and use a wider range of tools and components, including construction materials, textiles, and ingredients, according to their functional properties and aesthetic qualities.</p>

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<p>Evaluate</p>	<ul style="list-style-type: none"> *To consider what went well, thinking about design criteria. *To describe what changes they would make if they were to carry out the activity again and why. *To talk about existing products - consider use, materials, how they work, and audience. *To express personal opinions. *To talk about what materials products are made from. 	<ul style="list-style-type: none"> *To explore and evaluate a range of existing products. *To evaluate their ideas and products against design criteria. 	<ul style="list-style-type: none"> *To identify strengths and areas for development in their ideas and products. *To use their design criteria to evaluate their completed products. *To explain how an original design has been changed and improved. Using existing products * To investigate and analyse who designed and made products, where and when the products were designed and made. *To find out whether products can be recycled or reused. 	<ul style="list-style-type: none"> * To evaluate their ideas and products against design criteria – design, manufacture, materials chosen, methods of construction, how well product works, how well it meets the needs and wants of users and fitness for purpose. *To consider the views of others to improve their work. *To investigate and evaluate a range of existing products. Using existing products * To investigate and analyse how much products cost to make, how innovative products are, how sustainable the materials in the products are and the impact they have beyond their intended purpose. *To show understanding of how key events and individuals in design technology have helped shape the world e.g. inventors, designers, engineers, chefs and manufacturers. 	<ul style="list-style-type: none"> *To investigate and analyse a their own design criteria and consider the views of others to improve their work. *To understand how key events and individuals in design and technology have helped shape the world.
<p>Technical Knowledge</p>	<ul style="list-style-type: none"> *To know about the simple characteristics of materials and components. *To explore and use sliders and levers. *To explore and use wheels and axles. *To explore ways structures can be made stronger, stiffer, and more stable. *To use correct technical vocabulary for projects they are undertaking. 	<ul style="list-style-type: none"> *To build structures, explore how they can be stronger, stiffer, and more stable. *To explore and use mechanisms (for example levers, sliders, wheels, and axles), in their products. 	<ul style="list-style-type: none"> *To show understanding of how to make a structure stronger by folding, joining, reinforcing or by shape (columns, triangles). *To use a junior hacksaw under supervision. *To know how to use electrical systems in their products. * To know that mechanical systems such as levers, linkages and pneumatics systems to 	<ul style="list-style-type: none"> * To show understanding of mechanical systems used in products (cams, pulleys, gears) to create movement. *To know how to create more complex electrical circuits and components *To apply their understanding of computing to program, monitor and control their products. *To know how to reinforce and strengthen a 3D 	<ul style="list-style-type: none"> *To apply their understanding of how to strengthen, stiffen and reinforce more complex structures. *To understand and use mechanical systems in their products (for example, gears, pulleys, cams, levers and linkages).

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			<p>create movement. *To know how to program a computer to control their products.</p>	<p>framework. *To use a glue gun under supervision.</p>	<p>*To understand and use electrical systems in their products (for example, series circuits incorporating switches, bulbs, buzzers and motors). *To apply their understanding of computing to program, monitor and control their products.</p>
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KS1 – Children should work in a range of relevant contexts (e.g., home, school, gardens and playgrounds, the local community, industry, and the wider environment).

KS2 - Children should work in a range of relevant contexts (e.g., the home, leisure, culture, enterprise, industry, and the wider environment).

Teachers should make and develop links between DT and the projects they are carrying out in class to make experiences more meaningful.

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