DESIGN AND TECHNOLOGY PROGRESSION MAP OF KEY LEARNING AND KNOWLEDGE

EYFS	Early Learning Goals
	Physical Development - Fine Motor Skills- • Use a range of small tools, including scissors, paintbrushes and cutlery. • Begin to show accuracy and care when drawing. **Expressive Arts and Design - Creating with Materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function. • Share their creations, explaining the process they have used. **Personal, Social and Emotional Development – Managing Self** • Manage their own basic hygiene and personal needs, including dressing, going to the toiler and **understanding the importance of healthy food choices.**

Key learning	KS1	Lower KS2	Upper KS2	Across KS2
Designing Understanding contexts, users and purposes. Generating, developing, modelling and communicating ideas.	Work confidently within a range of contexts, such as imaginary, story-based, home, school, gardens, playgrounds, local community, industry and the wider environment. State what products they are designing and making. Say whether their products are for themselves or other users. 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. Generate ideas by drawing on their own experiences. Use knowledge of existing products to help come up with ideas. Develop and communicate ideas by talking and drawing. Model ideas by exploring materials, components and construction kits and by making templates and mock ups. Use information and communication technology, where appropriate, to develop and communicate their ideas.	Gather information about the needs and wants of particular individuals and groups. Develop their own design criteria and use these to inform their idea. Generate realistic ideas, focusing on the needs of the user. Make design decisions that take account of the availability of resources.	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. Generate innovative ideas, drawing on research. Make design decisions, taking account of constraints such as time, resources and cost.	Work confidently within a range of contexts such as the home, school, leisure, culture, enterprise, industry and the wider environment. Describe the purpose of their products. Indicate the design features of their products that will appeal to intended users. Explain how particular parts of their products work. Share and clarify ideas through discussion. 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.

Making *Planning.* *Practical skills and techniques.*	*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.*	*Order the main stages of making.* *Measure, mark out, cut and shape materials and components with some accuracy.* *Assemble, join and combine materials and components with some accuracy.* *Apply a range of finishing techniques, including those from art and design, with some accuracy.*	*Produce appropriate lists of tools, equipment and materials that they need.* *Formulate step-by-step plans as a guide to making.* *Accurately measure, mark out, cut and shape materials and components.* *Accurately assemble, join and combine materials and components.* *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 problem.*	*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.* *Select materials and components suitable for the task.* *Explain their choice of materials and components according to functional properties and aesthetic qualities.* *Follow procedures for safety and hygiene.* *Use a wider range of materials and components than KS1, including construction materials and kits, textiles, food ingredients, mechanical components and electrical components.*
Evaluating *Own ideas and products.* *Existing products.* *Key events and individuals.*	*Talk about their design ideas and what they are making.* *Make simple judgements about their products and ideas against design criteria.* *Suggest how their products could be improved.* *What products are.* *Who products are for.* *What products are for.* *How products work.* *How products are used.* *Where products might be used.* *What materials products are made from.* *What they like and dislike about products.*	*Refer to their design criteria as they design and make.* *Use their design criteria to evaluate their completed products.* *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.*	*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.* *How much products cost to make.* *How innovative products are.* *How sustainable the materials in products are.* *What impact products have beyond their intended purpose.*	*Identify the strengths and areas for development in their ideas and products.* *Consider the views of others including intended users, to improve their work.* *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.* *About inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.*
Cooking and nutrition *Where food comes from* *Food preparation, cooking and nutrition.*	*That all food comes from plants or animals.* *That food has to be farmed, grown elsewhere (e.g. home) or caught.* *How to name and sort foods into the five groups in The Eatwell Plate.* *That everyone should eat at least five portions of fruit and vegetables every day.* *How to prepare simple dishes safely and hygienically, without using a heat source.* *How to use techniques such as cutting, peeling and grating.*	*That a healthy diet is made up from a variety and balance of different food and drink, as depicted in The Eatwell Plate.* *That to be active and healthy, food and drink are needed to provide energy for the body.*	*That seasons may affect the food available.* *How food is processed into ingredients that can be eaten or used in cooking.* *That recipes can be adapted to change the appearance, taste, texture and aroma.* *That different food and drink contain different substances–nutrients, water and fibre–that are needed for health.*	*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.* *How to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.* *How to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.*

<table>
<tr><td rowspan="3"><u>Technical knowledge</u></td><td><u>Year 1</u></td><td><u>Year 2</u></td><td><u>Year 3</u></td><td><u>Year 4</u></td><td><u>Year 5</u></td><td><u>Year 6</u></td></tr>
<tr><td rowspan="2">About the movement of simple mechanisms such as levers and sliders.
How freestanding structures can be made stronger, stiffer and more stable.
That food ingredients should be combined according to their sensory characteristics.
The correct technical vocabulary for the projects they are undertaking.</td><td rowspan="2">That a 3-D textiles product can be assembled from two identical fabric shapes.
About the simple working characteristics of materials and components.
About the movement of simple mechanisms such as wheels and axles.
That food ingredients should be combined according to their sensory characteristics.
The correct technical vocabulary for the projects they are undertaking.</td><td rowspan="2">That a single fabric shape can be used to make a 3D textiles product.
How mechanical systems such as levers and linkages or pneumatic systems create movement.
That food ingredients can be fresh, pre-cooked and processed.
The correct technical vocabulary for the projects they are undertaking.</td><td rowspan="2">How to program a computer control their products.
How to make strong, stiff shell structures.
How simple electrical circuits and components can be used to create functional products.
That food ingredients can be fresh, pre-cooked and processed.
The correct technical vocabulary for the projects they are undertaking.</td><td>That a 3D textiles product can be made from a combination of fabric shapes.
How mechanical systems such as cams or pulleys or gears create movement.
That a recipe can be adapted by adding or substituting one or more ingredients.</td><td>How more complex electrical circuits and components can be used to create functional products.
How to program a computer to monitor changes in the environment and control their products.
How to reinforce and strengthen a 3D framework.
That a recipe can be adapted by adding or substituting one or more ingredients.</td></tr>
<tr><td colspan="2">How to use learning from science to help design and make products that work.
How to use learning from mathematics to help design and make products that work.
That materials have both functional properties and aesthetic qualities.
That materials can be combined and mixed to create more useful characteristics.
That mechanical and electrical systems have an input, process and output.
The correct technical vocabulary for the projects they are undertaking.</td></tr>
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