Inspirational Learning, Aspirational Children

Skills Progression Map: DT

	Y3 **Food – Soup** **Textiles – Purses** **Mechanical Systems - Catapults**	Y4 **Shell Structures – Boxes** **Electrical Systems – Nightlight** **Computer Aided Design**	Y5 **Food – Gingerbread** **Mechanical Systems CAMS – Toys with moving parts** **Textiles - Puppets**	Y6 **Electrical Systems - Controllable Vehicles** **Computer Programming/Structures – Bird box** **Food – Special Events**	End of KS Expectations
Design - Understanding contexts, users and purpose - Generating, developing, modelling and communicating ideas	Generate realistic ideas using information about the needs and wants of particular individuals and groups through discussion - **Food** - **Textiles** Describe how they will achieve the purpose of their product - **Food** - **Textiles** Make labelled drawings to show their design intentions - **Textiles** - **Catapults**	Gather information about the needs and wants of particular individuals and groups • **Light** To develop their own design criteria with support and use these to inform their ideas • **Shell structures** • **Light** Make design decisions that take into account availability of resources - **All projects**	Carry out research, using surveys, interviews, questionnaires and web-based resources - **Toys with moving parts** Identify the needs, wants, preferences and values of particular individuals and groups to create their own design criteria - **Toys with moving parts** - **Puppets** Draw on their research to generate innovative ideas and explain how the design features of their products will appeal to intended users - **All projects** Model ideas through prototypes and pattern pieces - **All projects**	Develop their own design specification, taking into account of constraints such as time, cost and availability of resources - **Food** Communicate their ideas through detailed labelled drawings, considering dimensions - **Electrical systems** - **Computer programming structures** Explain how particular parts of products work - **Electrical systems** - **Computer programming structures**	Children will 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. Children will 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. They will generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and CAD.
Making	Order the main stages of making with support - **All projects** Select tools and techniques for making their product and understand how to use them safely - **All projects**	Order the main stages of making independently - **Light** Select appropriate tools and techniques for making their product - **Light**	Write a step-by-step plan, including a list of resources required. - **All projects** Select from and use, a range of appropriate utensils, tools and equipment safely and accurately to measure and	Formulate step-by-step plans to guide their making, including designing processes such as prototypes and cross-sectional diagrams. - **All projects** Competently select from and use appropriate tools to accurately	Children will select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately.

	Measure, mark out, cut and shape materials and components with some accuracy - **All projects** Use finishing techniques strengthen and improve the appearance of their product. - **Purses** - **Catapults**	Measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques. - **All projects** Assemble, join and combine materials and components with increasing accuracy. - **All projects**	combine appropriate ingredients, materials and resources. - **All projects** Explain their choice of materials according to functional properties and aesthetic qualities. - **Puppets** - **Toys with moving parts**	measure, mark, cut and assemble materials, and securely connect electrical components to produce reliable, functional products. - **Electrical systems** - **Computer programming structures** Use finishing and decorative techniques suitable for the product they are designing and making. - **Electrical systems** - **Computer programming structures** Use appropriate programming skills to create a product which achieves a desired outcome. - **Computer programming structures**	Additionally, they will 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
Technical Understanding	Know how mechanical systems such as levers can create movement - **Catapults** Know that a single fabric shape can be used to make a 3D textiles product - **Purses** **Food – see Cooking and Nutrition**	Know how simple electrical circuits and components can be used to create functional products - **Light** Know how to make strong, stiff shell structures - **Boxes** Use Computer Aided Design to communicate their ideas and model products or packaging - **CAD**	Know how mechanical systems such as CAMs can create movement - **Toys with moving parts** Know that a 3D textiles product can be made from a combination of fabric shapes - **Puppets** **Food – see Cooking and Nutrition**	Know how more complex electrical circuits and components can be used to create functional products - **Controllable vehicles** Know how to program a computer to monitor changes in the environment and control their products - **Computer programming/ structures** Know how to reinforce and strengthen a 3D framework - **Computer programming/ structures** - **Controllable vehicles** **Food – see Cooking and Nutrition**	Children can apply their understanding of how to strengthen, stiffen and reinforce more complex structures They understand and use mechanical systems in their products [for example, gears, pulleys, cams, levers and linkages] They 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.

Evaluating - **Own products** - **Existing products** - **Key events and individuals**	Investigate a range of products such as foods, ingredients, textile items, etc. linked to their projects. Say what went well and could be improved in their product, considering the success criteria with support. To discuss the work of some recognised designers that have been studied.	Disassemble and evaluate existing similar packaging/products to inspire their own creations. Refine methods and their design as work progresses, constantly reassessing and adapting design. Use prototypes to help make improvements. Critically assess the effectiveness of a product of against a success criteria to find strengths and improvements in their work.	Evaluate current products, combining design ideas from different designers. Evaluate throughout the prototype and making stages to adapt plans to make improvements. Assess the suitability of materials and mechanisms. Critically assess the effectiveness of a product of against a success criteria, taking into account the opinions of others.	Start with existing designs and offer improvements. Carry out appropriate tests to assess the suitability of materials and mechanisms and identify specific areas of design/ production that could be improved. Critically assess the effectiveness of a product of against a success criteria, taking into account the opinions of others.	Evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. Investigate and analyse a range of existing products. Understand how key events and individuals in design and technology have helped shape the world.
Cooking and Nutrition	Combine and cook ingredients with some independence to create a balanced meal. Know that a healthy diet is made up from a variety and balance of different food and drink (the Eatwell Guide). Know to be active and healthy, food and drink are needed to provide energy for the body. **Technical Knowledge** - I can prepare a hygienic workspace to carry out my cookery - I can use a knife safely, using the correct grip – bridge or claw. - I can use a vegetable peeler safely.		Know how food is processed into ingredients that can be eaten or used in cooking Know that recipes can be adapted to change the appearance, taste, texture and aroma **Technical Knowledge** - I can mix ingredients thoroughly in preparation for baking. - I can use measuring equipment accurately and independently.	Know that seasons may affect the food available Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health	Children will understand and apply the principles of a healthy and varied diet. They will prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. Children will understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.