



## Millbrook Primary School Layer 2: D&T Substantive Concept Progression



		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Design</b>	<b>Presenting</b>	Return to and build on their previous learning, refining ideas and developing their ability to represent them.	Develop and communicate ideas through talk, drawings and mock ups.	Develop, model and communicate their ideas through talking, mock ups and drawings.	Use annotated sketches, prototypes, final products sketches and pattern pieces; communication technology such as web-based recipes, to develop and communicate ideas.	Use annotated sketches and appropriate information technology, such as web-based recipes, to develop and communicate ideas.  Generate, develop, model and communicate ideas through discussion and as appropriate, annotated sketches, cross-sectional and exploded diagrams.	Use discussion, annotated drawings, exploded drawings and drawings from different views and where appropriate computer-aided design to develop and communicate ideas.	Use annotated sketches, pictorial representations of electrical circuits or circuit diagrams to develop and communicate their ideas.  Generate and develop innovative ideas and share and clarify these through discussion.
	<b>Criteria</b>		Use simple design criteria.	Use simple design criteria.	Use realistic design criteria.	Develop realistic design criteria to inform design of products that are fit for purpose.	Develop realistic design criteria and brief for a design specification.	Develop realistic design criteria and specification to guide their development of their ideas and products, taking account of constraints including time, resources and cost.
	<b>Innovation</b>		Generate initial ideas through own experiences.	Generate ideas based on own experiences, explaining what they could make, thinking about the specific user.	Generate realistic ideas through discussion and design for appealing, functional products fit for purpose and specific users.	Generate and clarify ideas through discussion with peers and design products that are fit for purpose and aimed at particular individuals or groups.	Generate innovative ideas through research including surveys, interviews and questionnaires and discussion with peers.  Design purposeful, functional, appealing products for the intended user that are fit for purpose.	Generate innovative ideas through research including surveys, interviews, questionnaires and web-based resources to develop a design specification for a range of functional products.
	<b>Planning</b>			Plan by suggesting what to do next.	Plan the main stages of making.	Order the main stages of making.	Produce detailed lists of equipment and fabrics relevant to their tasks.  Write a step-by-step plan, including a list of resources required.	Produce detailed lists of equipment and fabrics relevant to their tasks explaining their uses.  Formulate a step-by-step plan to guide making, listing tools, equipment, materials and components.



## Millbrook Primary School Layer 2: D&T Substantive Concept Progression



		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Cooking and Nutrition	Food Hygiene			Know basic food handling, hygiene practices and personal hygiene.	Demonstrate hygienic food preparation and storage.		To apply the rules for basic food hygiene and other safe practices e.g. hazards relating to the use of ovens.	
	Food Production			To understand where a range of fruit and vegetables come from e.g. farmed or grown at home.	Know about a range of fresh and processed ingredients appropriate for their product and whether they are grown, reared or caught.		Understand about seasonality in relation to food products and the source of different food products.	
	Healthy Eating	Know and talk about the different factors that support their overall health including Healthy eating.		To use the basic principles of nutrition and healthy eating (eatwell plate) to prepare a healthy and varied dish.	To understand and apply the principles of a healthy and varied diet		To understand the nutritional content of different foods and apply this knowledge to their product.	
	Food Knowledge			To select and use appropriate fruit and vegetables.	To select and use appropriate ingredients and begin to combine them.		To select, use and combine appropriate ingredients.	



## Millbrook Primary School Layer 2: D&T Substantive Concept Progression



		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Technology</b>	<b>Electronics</b>					Understand and begin to use electrical systems in their products (for example, series circuits incorporating switches, bulbs).	Understand and use electrical systems in their products (series circuits, bulbs and motors).	Understand and use electrical systems in their products (series circuits, bulbs, buzzers and motors).  Understand that electrical systems have an input, process and an output.
	<b>Structure</b>		To build structures, exploring how they can be made stronger, stiffer and more stable.	To build structures, exploring how they can be made stronger, stiffer and more stable.  Begin modelling in 2D and 3D.		To develop their understanding of how to strengthen and stiffen more complex structures using a range of equipment.  Use knowledge of nets, cubes and cuboids to make more complex 3D shapes.	To apply their understanding of how to strengthen and stiffen more complex structures using a range of equipment.	To apply their understanding of how to strengthen, stiffen and reinforce 3D frameworks using appropriate equipment.
	<b>Mechanisms</b>		Begin to use mechanisms (levers and slides).  Understand that different mechanisms produce different types of movement.	To explore and use mechanisms (levers, sliders, wheels and axles).  Distinguish between fixed and freely moving axles.	Understand how to use lever and linkage mechanisms.  Distinguish between fixed and loose pivots.	Understand how to use lever, linkage and pulley mechanisms.  Understand that mechanical systems have an input and an output.	Understand how to use mechanisms (levers, wheels, axles, pulleys and gears).  Understand that gears and pulleys can be used to speed up, slow down or change the direction of movement.	To apply their knowledge of mechanisms to a problem (levers, linkages, pulleys, gears, axles and wheels).  Understand that mechanical systems have an input, process and an output.
	<b>Textiles</b>		Understand how simple 3D textile products are made, using a template to create two identical shapes.		Understand the need for pattern and seam allowances.  Sew using a stitch, to weave and knit.			Produce a 3D textile product from a combination of accurately made pattern pieces, fabric shapes and different fabrics.  Sew using a range of different stitches.



## Millbrook Primary School Layer 2: D&T Substantive Concept Progression

		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	
		Making		Tool Safety and Selection	Develop their small motor skills so that they can use a range of tools competently, safely and confidently. Suggested tools: pencils for drawing and writing, paintbrushes, scissors, knives, forks and spoons	Know and learn how to use tools safely.  Select and uses simple tools and utensils to perform a job.	To use hand tools safely and appropriately.  To select and use appropriate tools independently, knowing their names and explaining their choices.	To work safely with a range of tools.  To select and use a range of tools, utensils and equipment with some accuracy related to their product.	To work safely with a range of tools.  Select and use appropriate tools, utensils and equipment with more accuracy related to their product.
Materials				Select from a range of ingredients and materials according to their characteristic to create a chosen product.	Select materials, components, reclaimed materials and construction kits to build and create their products.	Select materials, components, reclaimed materials and construction kits to build and create their products.	Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties.  Explain their choice of materials according to functional properties and aesthetic qualities.	Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties and combine appropriate ingredients, materials and resources.	Select from and use materials and components, including ingredients, construction and electrical components according to their function and properties and combine appropriate ingredients, materials and resources.
Cutting				Cut with help.  Using a template to create two identical shapes.	Cut and score with some accuracy.	Cut and score with more accuracy.	Cut and score with accuracy.	Cut and score with accuracy to ensure a good-quality finish to the product.	Cut and score with accuracy to ensure a good-quality finish to the product.
Joining				Join fabrics using different techniques e.g. gluing and stapling.	Join in temporary ways using basic joining techniques e.g., gluing, taping.	To tape, pin, sew and assemble components securely with more accuracy.	To join and combine materials and components accurately in temporary and permanent ways.	Join with accuracy in temporary and permanent ways to ensure a good-quality finish to the product.	To sew, tape, pin, stitch and assemble components in temporary and permanent ways to make a working model.
Finishing techniques				Use simple finishing techniques to improve the appearance of their product.	To choose and use appropriate finishing techniques.	To choose and use suitable finished techniques related to their product.	To shape a range of materials and use joining and cutting skills to finish accurately.	To apply shape, cutting and joining skills to ensure a good-quality finish to the product.	Use finishing and decorative techniques suitable for the product there are making to ensure a good-quality finish to the product.
Measuring				Measure and mark out with help	Measure with some accuracy.	Measure and mark out with more accuracy.	To measure and mark out a range of materials accurately.	To measure and mark out a range of materials accurately.	To measure and mark out a range of materials accurately.



## Millbrook Primary School Layer 2: D&T Substantive Concept Progression

		Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Functionality	Testing				Test their product against the original design criteria and with the intended user.	Test and evaluate their own products against design criteria and the intended user and purpose.	Test products with intended user and critically evaluate the quality of the design, manufacture, functionality and fitness for purpose.  Consider the views of others to improve their work.	Test the system to demonstrate its effectiveness for the intended user and purpose.  Carry out appropriate tests.
	Exploring Products		Taste, explore and evaluate a range of products to determine the intended user's preferences for the product.	Explore a range of existing products related to their design criteria.	Investigate a range of 3-D textile products, ingredients and lever and linkage products relevant to their project.	Investigate and evaluate a range of products including the ingredients, materials, components and techniques that are used.	Investigate and analyse products linked to their final product.	Investigate and analyse products lined to their final product.
	Criteria		Evaluate their ideas throughout and finished products against design criteria, including intended user and purpose.	Evaluate their product by discussing how well it works in relation to the purpose, the user and whether it meets the original design criteria.	Evaluate the ongoing work and the final product with reference to the design criteria and views of others.	Evaluate their ideas and products against their own design criteria and identify the strengths and areas for improvement in their work.	Compare the final product to the original design specification and record the evaluations.	Continually evaluate and modify the working features of the product to match the initial design specification.  Critically evaluate their products against their design specification, intended user and purpose, identifying strengths and areas for development.