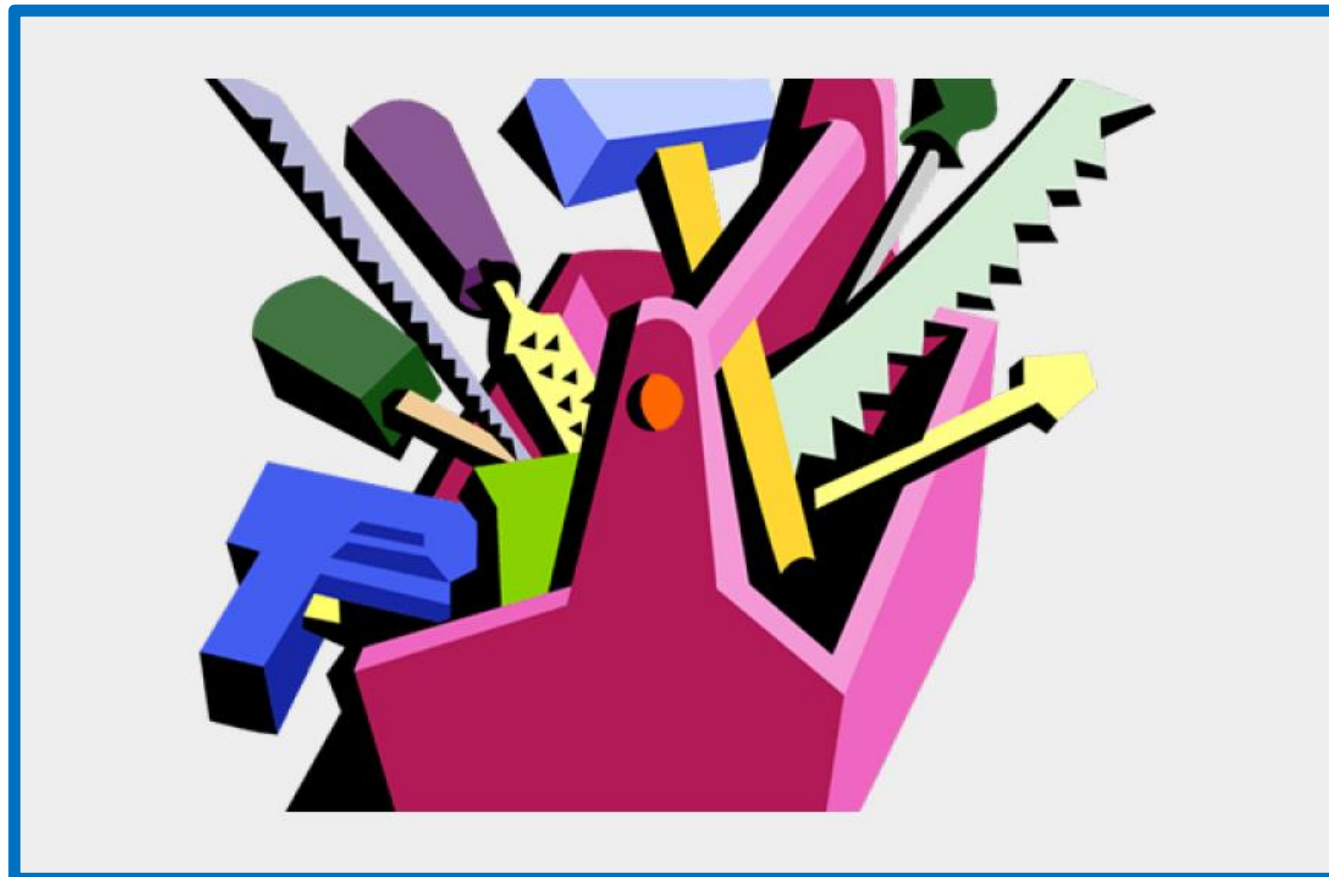




St Luke's CE Primary

Design and Technology Progression Map and End Points



St Luke's CE Primary

D&T Curriculum Progression and End Points

	End of EYFS	End of KS1	End of lower KS2	End of Upper KS2
To master partial skills	<ul style="list-style-type: none"> Children at the expected level of development will: 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 Make use of props and materials when role playing characters in narratives and stories. 	<p>Food</p> <ul style="list-style-type: none"> Cut, peel or grate ingredients safely and hygienically. Measure or weigh using measuring cups or electronic scales. Assemble or cook ingredients. <p>Materials</p> <ul style="list-style-type: none"> Cut materials safely using tools provided. Measure and mark out to the nearest centimetre. Demonstrate a range of cutting and shaping techniques (such as tearing, cutting, folding and curling). Demonstrate a range of joining techniques (such as gluing, hinges or combining materials to strengthen). <p>Textiles</p> <ul style="list-style-type: none"> Shape textiles using templates. Join textiles using running stitch. Colour and decorate textiles using a number of techniques (such as dyeing, adding sequins or printing) <p>Construction</p> <ul style="list-style-type: none"> Use materials to practise drilling, screwing, gluing and nailing materials to make and strengthen products. Mechanics Create products using levers, wheels and winding mechanisms. 	<p>Food</p> <ul style="list-style-type: none"> Prepare ingredients hygienically using appropriate utensils. Measure ingredients to the nearest gram accurately Follow a recipe. Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). <p>Materials</p> <ul style="list-style-type: none"> Cut materials accurately and safely by selecting appropriate tools. Measure and mark out to the nearest millimetre. Apply appropriate cutting and shaping techniques that include cuts within the perimeter of the material (such as slots or cut outs). Select appropriate joining techniques. <p>Textiles</p> <ul style="list-style-type: none"> Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Electricals and Electronics Create series and parallel circuits. <p>Construction</p> <ul style="list-style-type: none"> Choose suitable techniques to construct products or to repair items. Strengthen materials using suitable techniques. <p>Mechanics</p> <ul style="list-style-type: none"> Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product (such as levers, winding mechanisms, pulleys and gears). 	<p>Food</p> <ul style="list-style-type: none"> Understand the importance of correct storage and handling of ingredients (using knowledge of micro-organisms). Measure accurately and calculate ratios of ingredients to scale up or down from a recipe. Demonstrate a range of baking and cooking techniques. Create and refine recipes, including ingredients, methods, cooking times and temperatures. <p>Materials</p> <ul style="list-style-type: none"> Cut materials with precision and refine the finish with appropriate tools (such as sanding wood after cutting or a more precise scissor cut after roughly cutting out a shape). Show an understanding of the qualities of materials to choose appropriate tools to cut and shape (such as the nature of fabric may require sharper scissors than would be used to cut paper). <p>Textiles</p> <ul style="list-style-type: none"> Create objects (such as a cushion) that employ a seam allowance. Join textiles with a combination of stitching techniques (such as back stitch for seams and running stitch to attach decoration). Use the qualities of materials to create suitable visual and tactile effects in the decoration of textiles (such as a soft decoration for comfort on a cushion). <p>Electricals and Electronics</p> <ul style="list-style-type: none"> Create circuits using electronics kits that employ a number of components • (such as LEDs, resistors, transistors and chips). <p>Construction</p> <ul style="list-style-type: none"> Develop a range of practical skills to create products (such as cutting, drilling and screwing, nailing, gluing, filing and sanding). <p>Mechanics</p> <ul style="list-style-type: none"> Convert rotary motion to linear using cams.

				<ul style="list-style-type: none"> • Use innovative combinations of electronics (or computing) and mechanics in product designs.
To design, make, evaluate and improve		<ul style="list-style-type: none"> • Design products that have a clear purpose and an intended user. • Make products, refining the design as work progresses. <p>Identify aspects of their peers' work that they particularly like and why.</p>	<ul style="list-style-type: none"> • Design with purpose by identifying opportunities to design. • Make products by working efficiently (such as by carefully selecting materials). • Refine work and techniques as work progresses, continually evaluating the product design. 	<p>Design with the user in mind, motivated by the service a product will offer (rather than simply for profit).</p> <ul style="list-style-type: none"> • Make products through stages of prototypes, making continual refinements. • Ensure products have a high quality finish, using art skills where appropriate. • Use prototypes, cross-sectional diagrams and computer aided designs to represent designs.
To take inspiration from design throughout history		<p>Explore objects and designs to identify likes and dislikes of the designs.</p> <ul style="list-style-type: none"> • Suggest improvements to existing designs. 	<ul style="list-style-type: none"> • Identify some of the great designers in all of the areas of study (including pioneers in horticultural techniques) to generate ideas for designs. • Improve upon existing designs, giving reasons for choices. 	<ul style="list-style-type: none"> • Combine elements of design from a range of inspirational designers throughout history, giving reasons for choices. • Create innovative designs that improve upon existing products. • Evaluate the design of products so as to suggest improvements to the user experience. <p>Disassemble products to understand how they work.</p>

End Points in Learning in the Design and Technology Curriculum

EYFS

Explore, use and refine a variety of artistic effects to express their ideas and feelings. Return to and build on their previous learning, refining ideas and developing their ability to represent them. Create collaboratively, sharing ideas, resources and skills.

Year 1	Year 2	Year 3
<p>Design</p> <ul style="list-style-type: none"> • Pupils can explain the importance of a clear design criteria . • Pupils can explain how to adapt mechanisms, using bridges or guides to control the movement • Pupils can design a vehicle that includes wheels, axles and axle holders, which will allow the wheels to move . • Pupils can create clearly labelled drawings which illustrate movement. <p>Make</p> <ul style="list-style-type: none"> • Pupils can make stable structures from card, tape and glue. • Pupils can follow instructions to cut and assemble a supporting structure. • Pupils can follow a design to create moving models that use levers and sliders. • Pupils can adapt mechanisms. • Pupils can chop fruit and vegetables safely. • Pupils can identify if a food is a fruit or a vegetable. • Pupils can explain where and how fruits and vegetables grow. <p>Evaluate</p> <ul style="list-style-type: none"> • Pupils can evaluate their products according to the design criteria, testing whether the structure is strong and stable and altering it if it isn't • Pupils can suggest points for improvements. • Pupils can taste and evaluate different food combinations. <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Pupils can identify whether a mechanism is a lever or slider and determining what movement the mechanism will make. • Pupils can use the vocabulary: up, down, left, right, vertical and horizontal to describe movement. 	<p>Design</p> <ul style="list-style-type: none"> • Pupils can generate and communicate ideas using sketching and modelling. • Pupils can design a healthy wrap based on a food combination which work well together. <p>Make</p> <ul style="list-style-type: none"> • Pupils can make a structure according to a design criteria. • Pupils can create joints and structures from paper/card and tape. • Pupils can slice food safely using the bridge or claw grip • Pupils can select and cut fabrics for sewing. • Pupils can use a running stitch. <p>Evaluate</p> <ul style="list-style-type: none"> • Pupils can compare the stability of different shapes • Pupils can test the strength of own structures, identify the weakest part of a structure, evaluate the strength, stiffness and stability of own structure. • Pupils can describe the taste, texture and smell of fruit and vegetables • Pupils can describe the information that should be included on a label. • Pupils can troubleshoot scenarios posed by teacher. • Pupils can evaluate the quality of the stitching on others' work. • Pupils can identify aspects of their peers' work that they particularly like and why. <p>Technical Knowledge</p> <ul style="list-style-type: none"> • Pupils can explain what makes a balanced diet. • Pupils can explain where to find the nutritional information on packaging. • Pupils can name the five food groups. • Pupils can identify natural and man-made structures. • Pupils can identify when a structure is more or less stable than another. • Pupils can use the vocabulary: strength, stiffness and stability. • Pupils can build a strong and stiff structure by folding paper • Pupils can join items using fabric glue or stitching and identify the benefits of these techniques. • Pupils can thread a needle • Pupils can create a sewing running stitch, with evenly spaced, neat, even stitches to join fabric • Pupils can neatly pin and cut fabric using a template. 	<p>Design</p> <ul style="list-style-type: none"> • Pupils can design a game that works using static electricity and include instructions for playing the game • Pupils can identify a target audience and design criteria. • Pupils can create a healthy and nutritious recipe using seasonal ingredients, considering the taste, texture, smell and appearance of the dish. • Pupils can design and make a template from an existing textile product and apply an individual design criteria. <p>Make</p> <ul style="list-style-type: none"> • Pupils can make an electrostatic game, referring to the design criteria • Pupils can use a wider range of materials and equipment safely • Pupils can use electrostatic energy to move objects in isolation as well as in part of a system. • Pupils can prepare themselves and a work space to cook safely and learn the basic rules to avoid food contamination • Pupils can follow the instructions within a recipe. • Pupils can select and cut fabrics with ease using fabric scissors • Pupils can sew using cross stitch to join fabric. • Pupils can decorate a fabric using appliqué. • Pupils can complete design ideas with stuffing and sewing the edges. <p>Evaluate</p> <ul style="list-style-type: none"> • Pupils can establish and use a design criteria to help test and review dishes • Pupils can describe the benefits of seasonal fruits and vegetables and the impact on the environment • Pupils can give constructive criticism on own work and the work of others. • Pupils can test the success of a product against the original design criteria and justify opinions. <p>Technical knowledge</p> <ul style="list-style-type: none"> • Pupils can understand that climate affects food growth. Develop and imaginatively extend ideas from starting points throughout the curriculum. • Collect information, sketches and resources and present ideas imaginatively in a sketchbook. • Use the qualities of materials to enhance ideas. • Spot the potential in unexpected results as work progresses. • Comment on artworks with a fluent grasp of visual language. • Pupils can understand that imported foods travel from far away and this can negatively impact the environment • Pupils can explain that each fruit and vegetable give us nutritional benefits.

		<ul style="list-style-type: none"> • Pupils can use, store and clean a knife safely. • Pupils can thread needles with greater independence. • Pupils can tie knots with greater independence.
Year 4	Year 5	Year 6
<p><u>Design</u></p> <ul style="list-style-type: none"> • Pupils can design stable structure that is aesthetically pleasing and selecting materials to create a desired effect. • Pupils can build frame structures designed to support weight. • Pupils can design a shape that reduces air resistance. • Pupils can draw a net to create a structure from. • Pupils can choose shapes that increase or decrease speed as a result of air resistance. • Pupils can personalize a design. • Pupils can create a design for a recipe within a given budget, drawing upon previous taste testing. <p><u>Make</u></p> <ul style="list-style-type: none"> • Pupils can create a range of different shaped frame structures. • Pupils can make a variety of free-standing frame structures of different shapes and sizes. • Pupils can select appropriate materials to build a strong structure and for the cladding. • Pupils can reinforce corners to strengthen a structure. • Pupils can create different textural effects with materials. • Pupils can measure, mark, cut and assemble with increasing accuracy. • Pupils can make a model based on a chosen design. • Pupils can follow a baking recipe. • Pupils can cook safely, following basic hygiene rules. • Pupils can adapt a recipe. <p><u>Evaluation</u></p> <ul style="list-style-type: none"> • Pupils can evaluate structures made by the class. • Pupils can describe what characteristics of a design and construction made it the most effective. • Pupils can consider effective and ineffective designs. 	<p><u>Design</u></p> <ul style="list-style-type: none"> • Pupils can design an electronic product with a copper track circuit and components. • Pupils can create a labelled circuit diagram showing positive and negative parts in relation to the LED and the battery. • Pupils can write a design criteria for an electronic product compiling a mood board relevant to my chosen theme, purpose and recipient. • Pupils can adapt a traditional recipe, understanding that the nutritional value of a recipe alters if you remove, substitute or add additional ingredients. • Pupils can write an amended method for a recipe to incorporate the relevant changes to ingredients. • Pupils can design appealing packaging to reflect a recipe. • Pupils can design a stuffed toy considering the main component shapes required and creating an appropriate template whilst considering the proportions of individual components. <p><u>Make</u></p> <ul style="list-style-type: none"> • Pupils can make a functional series circuit. • Pupils can create an electronic product, referring to a design criteria mapping out where different components of the circuit will go. • Pupils can cut and prepare vegetables safely. • Pupils can use equipment safely, including knives, hot pans and hobs. • Pupils can demonstrate how to avoid cross-contamination. • Pupils can follow a step by step method carefully to make a recipe. • Pupils can create a 3D stuffed toy from a 2D design. • Pupils can measure, mark and cut fabric accurately and independently. 	<p><u>Design</u></p> <ul style="list-style-type: none"> • Pupils can design a playground featuring a variety of different structures, giving careful consideration to how the structures will be used, considering effective and ineffective designs. • Pupils can experiment with a range of cams, creating a design for an automata toy based on a choice of cam to create a desired movement. • Pupils can explain how linkages change the direction of a force. • Pupils can make things move at the same time. • Pupils can understand and draw cross-sectional diagrams to show the inner-workings of the automata. • Pupils can write a recipe, explaining the key steps, method and ingredients including facts and drawings from research undertaken. <p><u>Make</u></p> <ul style="list-style-type: none"> • Pupils can build a range of structures drawing upon new and prior knowledge of structures. • Pupils can measure, mark and cut wood to create a range of structures. • Pupils can use a range of materials to reinforce and add decoration to structures. • Pupils can measure, mark and check the accuracy of the jelutong and dowel pieces required. • Pupils can assemble components accurately to make a stable frame. • Pupils can select appropriate materials based on the materials being joined and the speed at which the glue needs to dry/set. • Pupils can follow a recipe, including using the correct quantities of each ingredient. • Pupils can adapt a recipe based on research. • Pupils can work to a given timescale when baking or cooking.

<ul style="list-style-type: none"> • Pupils can evaluate a recipe, considering: taste, smell, texture and appearance. • Pupils can describe the impact of the budget on the selection of ingredients. • Pupils and comparing a range of food products and suggest modifications. • Pupils can evaluate the speed of a final product based on: the effect of shape on speed and the accuracy of workmanship on performance. <p><u>Technical Knowledge</u></p> <ul style="list-style-type: none"> • Pupils can discuss the impact of the cost and importance of budgeting while planning ingredients for a recipe. • Pupils can discuss the environmental impact on future product and cost of production. • Pupils can explain what kinetic energy is. • Pupils can understand that architects consider light, shadow and patterns when designing • Pupils can implement frame and shell structure knowledge considering effective and ineffective designs. 	<ul style="list-style-type: none"> • Pupils can create and secure blanket stitches when joining fabric using applique to attach pieces of fabric decoration. <p><u>Evaluation</u></p> <p>Pupils can identify the nutritional differences between different products and recipes.</p> <ul style="list-style-type: none"> • Pupils can identify and describing healthy benefits of food group. • Pupils can evaluate a peer’s product against design criteria and suggesting modifications that could be made to improve the reliability or aesthetics of it or to incorporate another type of circuit component. • Pupils can analyse and evaluating a range of existing products. <p><u>Technical knowledge</u></p> <ul style="list-style-type: none"> • Pupils can explain where food comes from - learning that beef is from cattle and how beef is reared and processed. • Pupils can discuss what constitutes a balanced diet. • Pupils can adapt a recipe to make it healthier by comparing two adapted recipes using a nutritional calculator and then identifying the healthier option. • Pupils can sew blanket stitch to join fabric. • Pupils can apply blanket stitch so the space between the stitches are even and regular. • Pupils can thread needles independently. 	<ul style="list-style-type: none"> • Pupils can bake/cook safely and hygienically with independence. <p><u>Evaluation</u></p> <ul style="list-style-type: none"> • Pupils can improve a design plan based on peer evaluation, testing and adapting a design to improve it as it is developed. • Pupils can identify what makes a successful structure. • Pupils can evaluate a recipe, considering: taste, smell, texture and origin of the food group. • Pupils can suggest and writing up points of improvements in productions, evaluating health and safety in production to minimise cross contamination. <p><u>Technical knowledge</u></p> <ul style="list-style-type: none"> • Pupils can record the relevant ingredients and equipment needed for a recipe. • Pupils can describe the process of ‘Farm to Fork’ for a given ingredient. • Pupils can use a bench hook to saw safely and effectively. • Pupils can identify the shell structure in everyday life (cars, aeroplanes, tins, cans) • Pupils can identify man made and natural structures.
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