

'Shine like stars in the world. 'Philippians 2:15



St Paul's Church of England Primary School

Design and Technology Long Term Curriculum

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D&T Long Term Curriculum

**D&T Curriculum
Long Term Plan and Progression of Key Skills**

Technical knowledge: is statutory. Each unit can be taught in the 1st or 2nd half of the term. Every unit must follow the D&T Cycle (Research, Design, Make, Evaluate).

Areas of Study: Structures, Mechanisms, Textiles, Food & Nutrition, Electronics (KS2), Computing (KS2)

D&T Skills: Organised to show progression. These must be included with the unit, even if you do not use a Kapow unit.

[Links to Kapow.](#)

	Autumn	Spring	Summer
R	<p>Design</p> <ul style="list-style-type: none"> Select appropriate resources Use gestures, talking and arrangements of materials and components to show design Use language of designing and making (join, build, shape, longer, shorter, heavier etc.) 	<p>Make</p> <ul style="list-style-type: none"> Construct with a purpose, using a variety of resources Use simple tools and techniques Build / construct with a wide range of objects Select tools & techniques to shape, assemble and join Replicate structures with materials / components Discuss how to make an activity safe and hygienic Record experiences by drawing, writing, voice recording Understand different media can be combined for a purpose 	<p>Technical knowledge:</p> <p>Food</p> <p>Begin to understand some food preparation tools, techniques and processes</p> <ul style="list-style-type: none"> Practise stirring, mixing, pouring, blending Discuss how to make an activity safe and hygienic Discuss use of senses Understand need for variety in food Begin to understand that eating well contributes to good health <p>Evaluate</p> <ul style="list-style-type: none"> Adapt work if necessary Dismantle, examine, talk about existing objects/structures Consider and manage some risks Practise some appropriate safety measures independently Talk about how things work Look at similarities and differences between existing objects / materials / tools Show an interest in technological toys Describe textures

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<p>Y1</p>	<p>Learning Intent: <i>Textiles</i> Select from and use a wide range of textiles according to their characteristics.</p> <ul style="list-style-type: none"> • Cut textiles using simple templates. • Join textiles using gluing, pinning and/or stapling. • Colour and decorate textiles using a number of techniques (e.g. adding sequins or other pieces of materials). <p><u>Kapow: Puppets</u></p>	<p>Technical knowledge: <i>Mechanisms</i> Explore and use mechanisms. Create product using levers and sliders (e.g. moving picture)</p> <p><u>Kapow: Making a moving story book</u></p>	<p>Technical knowledge: <i>Food</i> To use the basic principles of a healthy and varied diet to prepare dishes.</p> <ul style="list-style-type: none"> • Know that all foods come from plants or animals. • Know that everyone should eat at least 5 portions of fruit and veg per day. • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients. <p><u>Kapow: Fruit and Vegetables (Making Smoothies)</u></p>
<p>Design have own ideas * explain what I want to do *explain what my product is for, and how it will work * use pictures and words to plan, begin to use models * design a product for myself following design criteria *research similar existing products</p> <p>Make explain what I'm making and why *consider what I need to do next *select tools/equipment to cut, shape, join, finish and explain choices *measure, mark out, cut and shape, with support *choose suitable materials and explain choices *try to use finishing techniques to make product look good *work in a safe and hygienic manner</p> <p>Evaluate talk about my work, linking it to what I was asked to do * talk about existing products considering: use, materials, how they work, audience, where they might be used *talk about existing products, and say what is and isn't good * talk about things that other people have made *begin to talk about what could make product better</p>			

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<p>Y2</p>	<p>Learning Intent: <i>Structures</i> To build structures using construction materials exploring how they can be made stronger, stiffer and more stable through joining. Practise gluing, folding, shaping and cutting materials to strengthen product. <u>Kapow: Baby Bear's Chair</u></p>	<p>Technical knowledge: <i>Food</i> To use the basic principles of a healthy and varied diet to prepare dishes.</p> <ul style="list-style-type: none"> • That all food has be farmed, grown elsewhere (e.g. home) or caught. • Name and sort food into different groups. • Cut, peel or grate ingredients safely and hygienically. • Measure or weigh using measuring cups or electronic scales. • Assemble or cook ingredients safely and hygienically. <p><u>Kapow: A Balanced Diet (Making a wrap)</u></p>	<p>Learning Intent: <i>Textiles</i> Select from and use a wide range of textiles according to their characteristics.</p> <ul style="list-style-type: none"> • Shape textiles using templates. • Join textiles using a running stitch. • Colour and decorate textiles using a number of techniques (e.g. dyeing, adding sequins or printing). <p><u>Kapow: Pouches</u></p>
<p>Design have own ideas and plan what to do next * explain what I want to do and describe how I may do it * explain purpose of product, how it will work and how it will be suitable for the user * describe design using pictures, words, models, diagrams, begin to use ICT * design products for myself and others following design criteria * choose best tools and materials, and explain choices * use knowledge of existing products to produce ideas</p> <p>Make explain what I am making and why it fits the purpose *make suggestions as to what I need to do next. *join materials/components together in different ways *measure, mark out, cut and shape materials and components, with support. *describe which tools I'm using and why *choose suitable materials and explain choices depending on characteristics. *use finishing techniques to make product look good *work safely and hygienically</p> <p>Evaluate describe what went well, thinking about design criteria * talk about existing products considering: use, materials, how they work, audience, where they might be used; express personal opinion *evaluate how good existing products are *talk about what I would do differently if I were to do it again and why.</p>			

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<p>Y3</p>	<p><u>Learning Intent:</u> <i>Food</i> To understand and apply the principles of a healthy and varied diet.</p> <ul style="list-style-type: none"> • Prepare ingredients hygienically using appropriate utensils. • Understand seasonality, and know where and how a variety of ingredients are grown. • Measure ingredients to the nearest gram accurately (if applicable to recipe). • Follow a recipe. • Assemble or cook ingredients (controlling the temperature of the oven or hob, if cooking). <p><u>Kapow: Adapting a recipe (only the vegetarian tarts; will need to plan research, design, make and evaluate lesson)</u></p>	<p><u>Learning Intent:</u> <i>Structures</i> Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately,</p> <ul style="list-style-type: none"> • Choose suitable techniques to construct or repair products. • Select from and use a wide range of tools. • Use annotated sketches <p><u>Kapow: Constructing a Castle that has two levels</u></p>	<p><u>Learning Intent:</u> <i>Mechanisms</i> To understand and use mechanical systems using annotated sketches.</p> <ul style="list-style-type: none"> • Use scientific knowledge of the transference of forces to choose appropriate mechanisms for a product with chassis and launch, gears and pulleys or levers and linkages. <p><u>Kapow: Making a slingshot car</u></p>
<p><u>Design</u> *begin to research others' needs * show design meets a range of requirements * describe purpose of product * follow a given design criteria * have at least one idea about how to create product * create a plan which shows order, equipment and tools *describe design using an accurately labelled sketch and words * make design decisions *explain how product will work * make a prototype * begin to use computers to show design</p> <p><u>Make</u> *select suitable tools/equipment, explain choices; begin to use them accurately * select appropriate materials, fit for purpose. * work through plan in order *consider how good product will be * begin to measure, mark out, cut and shape materials/components with some accuracy * begin to assemble, join and combine materials and components with some accuracy * begin to apply a range of finishing techniques with some accuracy</p> <p><u>Evaluate</u> * look at design criteria while designing and making *use design criteria to evaluate finished product * say what I would change to make design better *begin to evaluate existing products, considering: how well they have been made, materials, whether they work, how they have been made, fit for purpose * begin to understand by whom, when and where products were designed * learn about some inventors/designers/ engineers/chefs/ manufacturers of groundbreaking products</p>			

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<p>Y4</p>	<p>Learning Intent: <i>Textiles</i> Select from and use a wider range of materials and components including textiles according to their functional properties and aesthetic qualities.</p> <ul style="list-style-type: none"> Assemble their case using small, neat stitches (e.g. running stitch). Select the most appropriate techniques to decorate textiles. Attach a fastening. Use annotated sketches <p><u>Kapow: Fastening (book sleeve)</u></p>	<p>Learning Intent: <i>Food</i> To prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques.</p> <ul style="list-style-type: none"> To know that to be active and healthy, food and drink are needed to provide energy for the body. Use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking. <p><u>Kapow: Adapting a recipe (Making Biscuits)</u></p>	<p>Learning Intent: <i>Electronics</i> To understand and use electrical systems in their product.</p> <ul style="list-style-type: none"> Create simple circuits incorporating switches and bulbs <p><u>Kapow:Torches</u></p>
<p><u>Design</u> * use research for design ideas * show design meets a range of requirements and is fit for purpose *begin to create own design criteria *have at least one idea about how to create product and suggest improvements for design. * produce a plan and explain it to others *say how realistic plan is. *include an annotated sketch *make and explain design decisions considering availability of resources *explain how product will work * make a prototype *begin to use computers to show design.</p> <p><u>Make</u> * select suitable tools and equipment, explain choices in relation to required techniques and use accurately *select appropriate materials, fit for purpose; explain choices * work through plan in order. * realise if product is going to be good quality * measure, mark out, cut and shape materials/components with some accuracy *assemble, join and combine materials and components with some accuracy *apply a range of finishing techniques with some accuracy</p> <p><u>Evaluate</u> *refer to design criteria while designing and making *use criteria to evaluate product * begin to explain how I could improve original design *evaluate existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * discuss by whom, when and where products were designed * research whether products can be recycled or reused * know about some inventors/designers/ engineers/chefs/manufacturers of ground-breaking products</p>			

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<p>Y5</p>	<p>Learning Intent: <i>Food</i> Understand seasonality, and know where and how a variety of ingredients are grown, reared, caught and processed.</p> <ul style="list-style-type: none"> • Know that seasons may affect the food available • Understand the importance of correct storage and handling of ingredients. • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe • Create and refine recipes, including ingredients, methods, cooking times and temperatures. • That different food and drink contain different substances- nutrients, water and fibre- that are needed for health. <p>Kapow: What could be healthier? (Make bolognese) Or Making Bread (PlanBee)</p>	<p>Learning Intent: <i>Mechanisms</i> To understand and use mechanical systems in their products. To use cam and followers. Kapow: Automatic Toys (Yr6 unit)</p>	<p>Learning Intent: <i>Electronics/Computing</i> To apply their understanding of computing to program, monitor and control their products.</p> <ul style="list-style-type: none"> • Use computer aided design. • Place and manoeuvre 3D objects, using computer-aided design. <p>Kapow: Monitoring Devices</p>
<p>Design *use internet and questionnaires for research and design ideas *take a user's view into account when designing * begin to consider needs/wants of individuals/groups when designing and ensure product is fit for purpose *create own design criteria * have a range of ideas *produce a logical, realistic plan and explain it to others. *use cross-sectional planning and annotated sketches * make design decisions considering time and resources. *clearly explain how parts of product will work. *model and refine design ideas by making prototypes and using pattern pieces. *use computer-aided designs.</p> <p>Make * use selected tools/equipment with good level of precision * produce suitable lists of tools, equipment/materials needed *select appropriate materials, fit for purpose; explain choices, considering functionality * create and follow detailed stepby-step plan * explain how product will appeal to an audience * mainly accurately measure, mark out, cut and shape materials/components *mainly accurately assemble, join and combine materials/components * mainly accurately apply a range of finishing techniques * use techniques that involve a small number of steps * begin to be resourceful with practical problems.</p> <p>Evaluate evaluate quality of design while designing and making *evaluate ideas and finished product against specification, considering purpose and appearance. *test and evaluate final product * evaluate and discuss existing products, considering: how well they've been made, materials, whether they work, how they have been made, fit for purpose * begin to evaluate how much products cost to make and how innovative they are *research how sustainable materials are *talk about some key inventors/designers/ engineers/ chefs/manufacturers of ground-breaking products.</p>			

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<p>Y6</p>	<p>Learning Intent: <i>Textiles</i> Select from and use a wider range of materials and components including textiles according to their functional properties and aesthetic qualities.</p> <ul style="list-style-type: none"> • Create an appropriate template for their stuffed toy. • Use appliqué or decorative stitching to decorate the front of their stuffed toy. • Use a blanket stitch <p><u>Kapow: Stuffed Toy (Yr5 unit)</u></p>	<p>Learning Intent: <i>Food</i> Prepare and cook a variety of predominantly healthy savoury dishes using a range of cooking techniques.</p> <ul style="list-style-type: none"> • Understand the importance of correct storage and handling of ingredients. • Measure accurately and calculate ratios of ingredients to scale up or down from a recipe <p>Create and refine recipes, including ingredients, methods, cooking times and temperatures.</p> <ul style="list-style-type: none"> • That recipes can be adapted to change the appearance, taste, texture and aroma. <p><u>Kapow: Come dine with me</u></p>	<p>Learning Intent: <i>Structures</i> To apply their understanding of how to strengthen, stiffen and reinforce more complex structures using construction materials.</p> <ul style="list-style-type: none"> • Develop a range of practical skills to create products (such as filing, sanding, drilling and screwing) • Use exploded diagrams <p><u>Kapow: Playgrounds</u></p> <p><i>Electronics</i> To understand and use electrical systems in their product. Create series circuits incorporating buzzers and motors. <u>Build key skills within Playground unit.</u></p>
<p><u>Design</u> draw on market research to inform design * use research of user's individual needs, wants, requirements for design * identify features of design that will appeal to the intended user * create own design criteria and specification * come up with innovative design ideas *follow and refine a logical plan. *use annotated sketches, crosssectional planning and exploded diagrams * make design decisions, considering, resources and cost * clearly explain how parts of design will work, and how they are fit for purpose * independently model and refine design ideas by making prototypes and using pattern pieces * use computer-aided designs</p> <p><u>Make</u> * use selected tools and equipment precisely *produce suitable lists of tools, equipment, materials needed, considering constraints * select appropriate materials, fit for purpose; explain choices, considering functionality and aesthetics * create, follow, and adapt detailed step-by-step plans *explain how product will appeal to audience; make changes to improve quality * accurately measure, mark out, cut and shape materials/components * accurately assemble, join and combine materials/components * accurately apply a range of finishing techniques * use techniques that involve a number of steps * be resourceful with practical problems</p> <p><u>Evaluate</u> evaluate quality of design while designing and making; is it fit for purpose? * keep checking design is best it can be. *evaluate ideas and finished product against specification, stating if it's fit for purpose *test and evaluate final product; explain what would improve it and the effect different resources may have had *do thorough evaluations of existing products considering: how well they've been made, materials, whether they work, how they've been made, fit for purpose *evaluate how much products cost to make and how innovative they are *research and discuss how sustainable materials are *consider the impact of products beyond their intended purpose *discuss some key inventors/designers/ engineers/ chefs/manufacturers of groundbreaking products</p>			