

St Anne's Church of England Primary School – Design and Technology Curriculum Overview.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Nursery	Exploring different materials	Joining different materials and exploring texture				
EYFS	Building models using construction equipment		Techniques for joining materials	Construction using a range of materials. Choosing tools and techniques for assembling materials. E.g. face masks Puppet making		Making rockets and objects they may need in space thinking about form and function. Junk modelling Be able to explain the process they have used.
Year 1				Food	Structures	
Year 2			Mechanisms		Textiles	
Year 3			Structures	3d Models		
Year 4		Structures and Electrical Systems	Food			
Year 5		Food		Structures (Long boats)		
Year 6	Textiles					Mechanical and Electrical Systems

Further Curriculum Information

Year 1	Food	Structures
	<ul style="list-style-type: none"> ▪ Develop a food vocabulary using taste, smell, texture and feel. ▪ Group familiar food products e.g. fruit and vegetables. ▪ Explain where food comes from. ▪ Cut, peel, grate, chop a range of ingredients ▪ Work safely and hygienically. ▪ Understand the need for a variety of foods in a diet. <p>Measure and weigh food items, non-statutory measures e.g. spoons, cups.</p>	<ul style="list-style-type: none"> ▪ Explore how to make structures stronger. ▪ Investigate different techniques for stiffening a variety of materials. ▪ Test different methods of enabling structures to remain stable. ▪ Join appropriately for different materials and situations e.g. glue, tape. ▪ Mark out materials to be cut using a template. ▪ Use a glue gun with close supervision.
Year 2	Mechanisms	Textiles
	<ul style="list-style-type: none"> ▪ Join appropriately for different materials and situations e.g. glue, tape. ▪ Try out different axle fixings and their strengths and weaknesses. ▪ Make vehicles with construction kits which contain free running wheels. ▪ Use a range of materials to create models with wheels and axles e.g. tubes, dowel, cotton reels. ▪ Roll paper to create tubes. ▪ Cut dowel using hacksaw and bench hook. ▪ Attach wheels to a chassis using an axle. ▪ Mark out materials to be cut using a template. ▪ Fold, tear and cut paper and card. ▪ Cut along lines, straight and curved. ▪ Use a hole punch. ▪ Insert paper fasteners for card. <p>Experiment with levers and sliders to find different ways of making things move in a 2D plane.</p>	<ul style="list-style-type: none"> ▪ Cut out shapes which have been created by drawing round a template onto the fabric. ▪ Join fabrics by using e.g. running stitch, glue, staples, over sewing, tape. ▪ Decorate fabrics with attached items e.g. buttons, beads, sequins, braids, ribbons. ▪ Colour fabrics using a range of techniques e.g. fabric paints, printing, painting.

<p style="text-align: center;">Year 3</p>	<p style="text-align: center;">Structures and Mechanisms</p> <ul style="list-style-type: none"> ▪ Develop vocabulary related to the project. ▪ Create shell or frame structures. ▪ Strengthen frames with diagonal struts. ▪ Make structures more stable by giving them a wide base. ▪ Measure and mark square section, strip and dowel accurately to 1cm. ▪ Develop vocabulary related to the project. ▪ Use mechanical systems such as gears, pulleys, levers and linkages. ▪ Use lolly sticks/card to make levers and linkages. <p>Use linkages to make movement larger or more varied.</p>	<p style="text-align: center;">3 D Models</p> <ul style="list-style-type: none"> ▪ Select from and use a wider range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing], accurately ▪ Select from and use a wider range of materials and components, including construction materials, according to their functional properties and aesthetic qualities
<p style="text-align: center;">Year 4</p>	<p style="text-align: center;">Structures and Electrical Systems</p> <ul style="list-style-type: none"> ▪ Develop vocabulary related to the project. ▪ Create shell or frame structures. ▪ Strengthen frames with diagonal struts. ▪ Make structures more stable by giving them a wide base. ▪ Measure and mark square section, strip and dowel accurately to 1cm. ▪ Develop vocabulary related to the project. ▪ Incorporate a circuit into a model. ▪ Use electrical systems such as switches bulbs and buzzers. ▪ Use ICT to control products. 	<p style="text-align: center;">Food</p> <ul style="list-style-type: none"> ▪ Develop sensory vocabulary/knowledge using, smell, taste, texture and feel. ▪ Analyse the taste, texture, smell and appearance of a range of foods (predominantly savoury). ▪ Follow instructions/recipes. ▪ Make healthy eating choices – use the <i>Eatwell plate</i>. ▪ Join and combine a range of ingredients. ▪ Explore seasonality of vegetables and fruit. ▪ Find out which fruit and vegetables are grown in countries/continents studied in Geography. ▪ Develop understanding of how meat/fish are reared/caught.

<p style="text-align: center;">Year 5</p>	<p style="text-align: center;">Food</p> <ul style="list-style-type: none"> ▪ Prepare food products taking into account the properties of ingredients and sensory characteristics. ▪ Weigh and measure using scales. ▪ Select and prepare foods for a particular purpose. ▪ Work safely and hygienically. ▪ Show awareness of a healthy diet (using the eatwell plate). ▪ Use a range of cooking techniques. ▪ Know where and how ingredients are grown and processed. ▪ Consider influence of chefs e.g. Jamie Oliver and school meals, Hugh Fearnley-Whittingstall and sustainable fishing etc. 	<p style="text-align: center;">Structures and Mechanical systems</p> <ul style="list-style-type: none"> ▪ Use the correct terminology for tools materials and processes. ▪ Use bradawl to mark hole positions. ▪ Use hand drill to drill tight and loose fit holes. ▪ Cut strip wood, dowel, square section wood accurately to 1mm. ▪ Join materials using appropriate methods. ▪ Build frameworks to support mechanisms. ▪ Stiffen and reinforce complex structures. ▪ Develop a technical vocabulary appropriate to the project. ▪ Use mechanical systems such as cams, pulleys and gears.
<p style="text-align: center;">Year 6</p>	<p style="text-align: center;">Textiles</p> <ul style="list-style-type: none"> ▪ Use the correct vocabulary appropriate to the project. ▪ Create 3D products using patterns pieces and seam allowance. ▪ Understand pattern layout. ▪ Decorate textiles appropriately (often before joining components). ▪ Pin and tack fabric pieces together. ▪ Join fabrics using over sewing, back stitch, blanket stitch or machine stitching (closer supervision). ▪ Combine fabrics to create more useful properties. ▪ Make quality products. 	<p style="text-align: center;">Structures, Mechanisms and Electrical Systems</p> <ul style="list-style-type: none"> ▪ Use the correct terminology for tools materials and processes. ▪ Use bradawl to mark hole positions. ▪ Use hand drill to drill tight and loose fit holes. ▪ Cut strip wood, dowel, square section wood accurately to 1mm. ▪ Join materials using appropriate methods. ▪ Build frameworks to support mechanisms. ▪ Stiffen and reinforce complex structures. ▪ Develop a technical vocabulary appropriate to the project. ▪ Use mechanical systems such as cams, pulleys and gears. ▪ Use electrical systems such as motors. ▪ Program, monitor and control using ICT.

Design Process Objectives

	Design	Make	Evaluate
Years 1 and 2	<ul style="list-style-type: none"> ▪ Use pictures and words to convey what they want to design/make. ▪ Propose more than one idea for their product. ▪ Use kits/reclaimed materials to develop more than one idea. ▪ Model ideas with kits, reclaimed materials. ▪ Select appropriate technique explaining: First... Next... Last.... ▪ Explore ideas by rearranging materials. ▪ Select pictures to help develop ideas. ▪ Use drawings to record ideas as they are developed. ▪ Add notes to drawings to help explanations. ▪ Describe their models and drawings of ideas and intentions. 	<ul style="list-style-type: none"> ▪ Discuss their work as it progresses. ▪ Select materials from a limited range that will meet the design criteria. ▪ Select and name the tools needed to work the materials. ▪ Explain what they are making. ▪ Explain which materials they are using and why. ▪ Name the tools they are using. ▪ Describe what they need to do next. 	<ul style="list-style-type: none"> ▪ Explore existing products and investigate how they have been made. ▪ Decide how existing products do/do not achieve their purpose. ▪ Talk about their design as they develop and identify good and bad points. ▪ Note changes made during the making process as annotation to plans/drawings. ▪ Say what they like and do not like about items they have made and attempt to say why. ▪ Discuss how closely their finished product meets their design criteria and how well it meets the needs of the user.
Years 3 and 4	<ul style="list-style-type: none"> ▪ Develop more than one design or adaptation of an initial design. ▪ Plan a sequence of actions to make a product. ▪ Record the plan by drawing using annotated sketches. ▪ Begin to use cross-sectional and exploded diagrams. ▪ Use prototypes to develop and share ideas. ▪ Think ahead about the order of their work and decide upon tools and materials. ▪ Propose realistic suggestions as to how they can achieve their design ideas. ▪ Consider aesthetic qualities of materials chosen. ▪ Use CAD where appropriate. 	<ul style="list-style-type: none"> ▪ Prepare pattern pieces as templates for their design. ▪ Cut slots. ▪ Cut internal shapes. ▪ Select from a range of tools for cutting shaping joining and finishing. ▪ Use tools with accuracy. ▪ Select from techniques for different parts of the process. ▪ Select from materials according to their functional properties. ▪ Plan the stages of the making process. ▪ Use appropriate finishing techniques. 	<ul style="list-style-type: none"> ▪ Investigate similar products to the one to be made to give starting points for a design. ▪ Draw/sketch products to help analyse and understand how products are made. ▪ Research needs of user. ▪ Identify the strengths and weaknesses of their design ideas in relation to purpose/user. ▪ Decide which design idea to develop. ▪ Consider and explain how the finished product could be improved. ▪ Discuss how well the finished product meets the design criteria of the user. ▪ Investigate key events and individuals in Design and Technology.
Years 5 and 6	<ul style="list-style-type: none"> ▪ List tools needed before starting the activity. ▪ Plan the sequence of work e.g. using a storyboard. ▪ Record ideas using annotated diagrams. ▪ Use models, kits and drawings to help formulate design ideas. ▪ Combine modelling and drawing to refine ideas. ▪ Devise step by step plans which can be read / followed by someone else. ▪ Use exploded diagrams and cross-sectional diagrams to communicate ideas. ▪ Sketch and model alternative ideas. ▪ Decide which design idea to develop. 	<ul style="list-style-type: none"> ▪ Make prototypes. ▪ Develop one idea in depth. ▪ Use researched information to inform decisions. ▪ Produce detailed lists of ingredients / components / materials and tools. ▪ Use a computer to model ideas. ▪ Select from and use a wide range of tools. ▪ Cut accurately and safely to a marked line. ▪ Select from and use a wide range of materials. ▪ Use appropriate finishing techniques for the project. ▪ Refine their product – review and rework/improve. 	<ul style="list-style-type: none"> ▪ Research and evaluate existing products (including book and web based research). ▪ Consider user and purpose. ▪ Identify the strengths and weaknesses of their design ideas. ▪ Give a report using correct technical vocabulary. ▪ Consider and explain how the finished product could be improved related to design criteria. ▪ Discuss how well the finished product meets the design criteria of the user. Test on the user! ▪ Understand how key people have influenced design.