



## Bourne Westfield Primary Academy Progression of Design Technology Skills



Each unit of work taught should cover the four main principles:

- 1) Design: Conducting research, planning and discussing ideas
- 2) Make: Working with tools, equipment, materials and components to make quality products
- 3) Evaluate: Skills of Judgement and Evaluation towards processes and products used
- 4) Improve: Acquiring and applying knowledge to inform progress further

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Generating ideas and Design	<ul style="list-style-type: none"> <li>Work in a range of contexts (imaginary, home, school, wider community, story based).</li> <li>Generate ideas from existing examples.</li> <li>Begin to talk about their designs.</li> </ul>	<ul style="list-style-type: none"> <li><b>Think of own ideas for design.</b></li> <li>Use pictures and words to plan.</li> <li>Design a product for myself, using design criteria.</li> <li>Work in a range of contexts (imaginary, home, school, wider community, story based).</li> </ul>	<ul style="list-style-type: none"> <li><b>Think of own ideas and plan what to do next.</b></li> <li>Describe designs using pictures, diagrams, mock ups and words.</li> <li><b>Design a product for myself and others, following design criteria.</b></li> <li>Work confidently in a range of contexts (imaginary, home, school, wider community, story based).</li> </ul>	<ul style="list-style-type: none"> <li><b>Create a design that meets a range of requirements.</b></li> <li>Consider the equipment and tools needed when planning.</li> <li><b>When planning, describe a design using an accurately labelled diagram (including measures) and in words.</b></li> <li>Design a product that is attractive</li> </ul>	<ul style="list-style-type: none"> <li><b>Generate more than one idea for a product.</b></li> <li>Gather information to help to design a successful product e.g other peoples' views.</li> <li><b>Produce a detailed plan with labelled diagrams</b> and begin to use exploded diagrams.</li> <li>When planning, indicate features of their products that will appeal to their intended users.</li> </ul>	<ul style="list-style-type: none"> <li><b>Generate a range of ideas after collating relevant information e.g data, peer assessments.</b></li> <li><b>Produce a detailed plan with cross sectional diagrams or exploded diagrams where appropriate.</b></li> <li><b>Suggest alternative plans, considering the positive aspects and drawbacks of each.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Use a range of information to inform a design e.g market research, surveys, interviews, or research.</b></li> <li>Produce a detailed plan with appropriate choice of diagrams.</li> <li>Work within constraints, refining and justifying plans as necessary.</li> </ul>
Making	<p>Shows understanding of how to transport, store and use equipment safely. Practices some appropriate safety measures without direct supervision.</p> <p>Explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <ul style="list-style-type: none"> <li>Handles tools, objects, construction and malleable materials with increasing control. Constructs with a purpose in mind, suggesting what to do next.</li> <li>Selects appropriate resources and adapts work where necessary.</li> </ul>	<ul style="list-style-type: none"> <li><b>Explain what is being made and why.</b></li> <li>Select appropriate tools and equipment for the purpose.</li> <li><b>Cut and shape materials.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Explain what is being made and why the audience will like it.</b></li> <li>Choose appropriate tools and equipment explaining why they are being used.</li> <li><b>Measure, mark out, cut and shape materials with some accuracy.</b></li> </ul>	<ul style="list-style-type: none"> <li>Use a range of tools and equipment accurately.</li> <li><b>Measure, mark out, assemble and join materials with increasing accuracy.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Use a range of tools and equipment with accuracy, explaining their choice.</b></li> <li><b>Explain their choice of materials according to their functional properties and how they look.</b></li> <li>Measure, mark out, join and assemble materials with accuracy.</li> <li>Order the stages of making.</li> <li>Perseveres and adapts work when original ideas do not work.</li> </ul>	<ul style="list-style-type: none"> <li>Produce appropriate lists of tools, equipment and materials that they need.</li> <li><b>Select a range of tools and equipment suitable for the task.</b></li> <li><b>Accurately measure, mark out, cut, assemble, join and combine materials and components.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Consider the aesthetic qualities and functionality of my product, amending as appropriate when making.</b></li> <li><b>Use a range of tools and equipment precisely.</b></li> <li><b>Accurately apply a range of finishing techniques.</b></li> <li>Demonstrate resourcefulness when tackling practical problems.</li> </ul>



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Evaluation	<ul style="list-style-type: none"> <li>Begin to talk about their design ideas and what they are making.</li> <li>Think about how to make their products better.</li> <li>Begin to explore what products are, who they are for, how they are used, where they are from.</li> </ul>	<ul style="list-style-type: none"> <li><b>Talk about own and pre-existing products saying what is good or bad about them.</b></li> <li>Say whether their product does what it is meant to do and how it could be improved.</li> </ul>	<ul style="list-style-type: none"> <li>Describe how their own and pre-existing products work.</li> <li><b>Evaluate what went well and what could be done differently.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Evaluate own and pre-existing products referring to the design criteria.</b></li> <li>Suggest what could be changed to improve a design, beginning to link this to the design brief.</li> <li>Know why a model has/has not been successful</li> </ul>	<ul style="list-style-type: none"> <li><b>Evaluate the appearance and usability of own and pre-existing products.</b></li> <li><b>Explain how the original design could be improved considering the appearance and usability and linking this to the design brief.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Evaluate the appearance and function of a product against the original criteria saying whether it is fit for purpose.</b></li> <li><b>Suggest improvements that could be made considering materials and methods that have been used.</b></li> </ul>	<ul style="list-style-type: none"> <li>Evaluate the appearance and test the function of a product (own and pre-existing) against the original design criteria saying whether it is fit for purpose.</li> <li><b>Suggest improvements that could be made, considering materials, methods, sustainability of the product and how much a product costs to make.</b></li> </ul>
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Technical knowledge and understanding	Food and Nutrition	<p>Name and sort some foods into healthy and unhealthy foods.</p> <p>Know that food ingredients should be combined according to their sensory characteristics.</p> <p>Shows some understanding that good practices with regard to exercise, eating, sleeping and hygiene can contribute to good health.</p>	<ul style="list-style-type: none"> <li>Name and sort some foods into the 5 groups (Eatwell plate).</li> <li><b>Know that everyone should eat at least 5 portions of fruit and vegetables every day.</b></li> <li>How to prepare simple dishes safely and hygienically (with close supervision) without using a heat source.</li> <li><b>Cut food safely.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Name and sort a range of foods into the 5 groups (Eatwell plate).</b></li> <li>Know that everyone should eat at least 5 portions of fruit and vegetables every day.</li> <li>How to prepare simple dishes safely and hygienically (with close supervision) without using a heat source.</li> <li><b>How to use techniques such as cutting, peeling and grating.</b></li> <li>Measure or weigh using measuring cups or electronic scales.</li> </ul>	<ul style="list-style-type: none"> <li>How to prepare and assemble a savoury dish.</li> <li><b>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading.</b></li> <li><b>Know that a healthy diet is made up from a variety and balance of different food and drink and describes which food is not healthy.</b></li> <li>Be able to follow a recipe.</li> <li><b>Prepare ingredients hygienically using appropriate utensils.</b></li> <li>Measure ingredients accurately to the nearest gram.</li> <li>Knows when food is ready for harvesting.</li> </ul>	<ul style="list-style-type: none"> <li>How to prepare and cook savoury dishes including the use of a heat source.</li> <li>How to use a range of techniques such as peeling, chopping, slicing, grating, mixing and spreading.</li> <li>Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in the Eatwell plate.</li> <li><b>Know that food is grown (such as tomatoes, wheat and potatoes), reared (such as pigs, chickens and cattle) and caught (such as fish) in the UK, Europe and the wider world.</b></li> <li>Know that to be active and healthy, food and drink are needed to provide energy for the body.</li> <li>Be able to follow a recipe.</li> <li>Prepare ingredients hygienically using appropriate utensils.</li> <li>Measure ingredients accurately to the nearest gram.</li> </ul>	<ul style="list-style-type: none"> <li>Prepare/cook a variety of predominantly savoury dishes, including the use of a heat source.</li> <li>To learn to control the temperature of the oven (developing independence as appropriate).</li> <li>Use a range of techniques such as peeling, chopping, grating, mixing, spreading, kneading and baking.</li> <li><b>Know that recipes can be adapted to change the appearance, taste, texture and aroma.</b></li> <li>Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</li> <li><b>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</b></li> </ul>	<ul style="list-style-type: none"> <li>Prepare/cook a variety of predominantly savoury dishes, including the use of a heat source.</li> <li>Use hobs to heat food with appropriate supervision and learn to control the temp. of the oven or hob (developing independence as appropriate).</li> <li><b>Use a range of techniques such as peeling, chopping, grating, mixing, spreading, kneading and baking.</b></li> <li>Know that recipes can be adapted to change the appearance, taste, texture and aroma.</li> <li><b>Know how food is processed into ingredients that can be eaten or used in cooking.</b></li> <li><b>Know that different food and drink contain different substances – nutrients, water and fibre – that are needed for health (also in Science)</b></li> <li>Understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.</li> <li>Understand the importance of correct storage and handling of ingredients (<a href="#">link to Science</a>).</li> </ul>
	Construction	<ul style="list-style-type: none"> <li>Join materials with masking tape or glue.</li> </ul>	<ul style="list-style-type: none"> <li>Practise gluing materials to make and strengthen products.</li> </ul>	<ul style="list-style-type: none"> <li><b>Know how to make structures stronger, stiffer and more stable.</b></li> </ul>	<ul style="list-style-type: none"> <li>Choose suitable techniques to construct products</li> <li>Strengthen materials using suitable techniques.</li> <li><b>Use knowledge of nets, cubes and cuboids to construct 3D shapes.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>To join a variety of construction materials, strengthening where necessary e.g card, plastic, wood.</b></li> </ul>	<ul style="list-style-type: none"> <li><b>Develop a range of practical skills to create products (e.g cutting, drilling, sanding and gluing, filling).</b></li> <li>Use knowledge to improve a made product by strengthening, stiffening and reinforcing.</li> </ul>	<ul style="list-style-type: none"> <li><b>To use a range of techniques to strengthen, stiffen and reinforce 3D frameworks.</b></li> </ul>



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	Textiles	Experiments to create different textures.  Understands that different media can be combined to create new effects.  Manipulates materials to achieve a planned effect.  Decorate textiles using a range of items (buttons, sequins, beads, ribbons etc).	<ul style="list-style-type: none"><li>• <b>Join textiles using a running stitch, over sewing or glue</b></li><li>• Decorate textiles using a range of items (buttons, sequins, beads, ribbons etc).</li></ul>	<ul style="list-style-type: none"><li>• Shape textiles using a template.</li><li>• <b>To use running stitch and over stitch to join materials.</b></li><li>• Begin to use a pattern design.</li></ul>		<ul style="list-style-type: none"><li>• <b>Cut, then join textiles using a running stitch, over sewing, back stitching and whip stitching.</b></li><li>• <b>Understand seam allowances and create simple pattern pieces.</b></li><li>• Create a prototype and pattern.</li></ul>		<ul style="list-style-type: none"><li>• <b>Pin and tac fabrics, use patterns and seam allowances and join fabrics to make quality products.</b></li><li>• <b>Choose the appropriate stitch for their design.</b></li><li>• Use techniques to add fastenings e.g zips, buttons.</li></ul>
	Mechanisms	<ul style="list-style-type: none"><li>• Create products using split pins so that part of them can move.</li><li>• Show an interest in toys with buttons and mechanisms.</li><li>• Begin to understand the movement of simple mechanisms such as levers, sliders and wheels.</li></ul>	<ul style="list-style-type: none"><li>• Create products using levers and sliders</li><li>• Create products using wheel mechanisms</li></ul>	<ul style="list-style-type: none"><li>• <b>Create products using wheels and axels.</b></li></ul>	Mechanical systems <ul style="list-style-type: none"><li>• <b>Know about the movement of simple mechanisms such as levers and linkages and make a product using them.</b></li></ul>		<u>Mechanical systems</u> <ul style="list-style-type: none"><li>• Convert rotary motion to linear using cams.</li><li>• <b>Understand how mechanical systems such as CAMS create movement.</b></li></ul>	<ul style="list-style-type: none"><li>• <b>Understand how pulleys and gears are used in products (in Science)</b></li></ul>
	Electrical Systems					<ul style="list-style-type: none"><li>• <b>Diagnose faults in battery operated devices (such as low battery, water damage or battery terminal damage) – science Autumn 1</b></li><li>• <b>Create designs which include simple series circuits.</b></li></ul>		<ul style="list-style-type: none"><li>• Create circuits using electronics kits that employ a number of components (such as LEDs, switches, motors and buzzers).</li><li>• <b>Write code to control and monitor models or products, including sensors.</b></li></ul>