



Design and Technology skills and knowledge progression

**Intent**

At Wantage Primary Academy, we encourage children to use their curiosity, creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts. We intend to build a Design Technology curriculum which develops learning and results in the acquisition of knowledge and skills. Children will do more, know more, remember more and understand more.

**Implementation**

Our DT curriculum is carefully mapped to build up progressive subject knowledge, skills and understanding as set out in the National Curriculum Design Technology Programmes of study, to fulfil the duties of the NC whereby we must provide a balanced and broadly-based curriculum which promotes the spiritual, moral, cultural, mental and physical development of pupils and prepares them for the opportunities and responsibilities and experiences for later life. Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to be successful in the subject of DT. The children work in a range of relevant contexts (for example home, school, leisure, culture, enterprise, industry and the wider environment). We use STEM resources to place problems in real life contexts.

		KS1		Lower KS2		Upper KS2	
	Foundation Stage	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Context / Examples of outcomes</b>	EYFS Framework	Puppets  Fruit kebabs	Moving parts  Balanced meals	Storybooks stitched Bread making Bird hides	Moving monsters Motorised vehicles Pizza	Programmable toys Sustainable housing Soup	Textiles Advertising and packaging Enchiladas
<b>Food and nutrition</b>	<p>Cut and peel ingredients.</p> <p>Understand the need for variety in food.</p> <p>Know the importance of a healthy diet.</p>	<p>Understand that all food comes from plants or animals.</p> <p>Know that food has to be farmed, grown elsewhere (e.g. home) or caught.</p> <p>Understand how to name and sort foods into the five groups in 'The Eat well plate'</p> <p>Know that everyone should eat at least five portions of fruit and vegetables every day.</p> <p>Demonstrate how to prepare simple dishes safely and hygienically, without using a heat source.</p> <p>Demonstrate how to use techniques such as cutting, peeling and grating.</p>	<p>Understand 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.</p> <p>Understand how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source.</p> <p>Know how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know that a healthy diet is made up from a variety and balance of different food and drink, as depicted in 'The Eat well plate'</p> <p>Know that to be active and healthy, food and drink are needed to provide energy for the body.</p>	<p>Understand 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.</p> <p>Understand that seasons may affect the food available.</p> <p>Understand how food is processed into ingredients that can be eaten or used in cooking.</p> <p>Know how to prepare and cook a variety of predominantly savoury dishes safely and hygienically including, where appropriate, the use of a heat source</p> <p>Understand how to use a range of techniques such as peeling, chopping, slicing, grating, mixing, spreading, kneading and baking.</p> <p>Know different food and drink contain different substances – nutrients, water and fibre – that are needed for health.</p>			
<b>End Outcomes</b>	<p><b>EYFS</b> Safely use and explore a variety of materials, tools and techniques. Know the importance of a healthy diet and talk about ways to keep healthy</p> <p><b>Years 1 and 2</b> Cut, peel or grate ingredients safely and hygienically. Measure or weigh using cups or electronic scales.</p> <p><b>Years 3 and 4</b> Prepare ingredients hygienically using appropriate utensils. Measure ingredients to the nearest gram accurately.</p> <p><b>Years 5 and 6</b> Understand the importance of the correct storage and handling of ingredients (using knowledge of micro-organisms).</p>						

	<p>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>			
<p><b>Developing, planning and communicating ideas</b></p>	<p>Introducing media, materials and tools: finding, using and putting them away with support</p> <p>Independently selecting &amp; using media, materials &amp; tools skilfully to generate their own creative work. Tools: scissors, glue, tape, card, paper</p> <p>Exploring &amp; combining media to create different effects: collage, clay, paint, chalk, oil pastels, felt tips</p>	<p>Start to generate ideas by drawing on their own and other people's experiences.</p> <p>Begin to develop their design ideas through discussion, observation, drawing and modelling.</p> <p>Identify a purpose for what they intend to design and make.</p> <p>Understand how to identify a target group for what they intend to design and make based on a design criteria.</p> <p>Develop their ideas through talk and drawings and label parts. Make templates and mock ups of their ideas in card and paper or using ICT.</p>	<p>Start to generate ideas, considering the purposes for which they are designing- link with Mathematics and Science.</p> <p>Confidently make labelled drawings from different views showing specific features. Develop a clear idea of what has to be done, planning how to use materials, equipment and processes, and suggesting alternative methods of making, if the first attempts fail.</p> <p>Identify the strengths and areas for development in their ideas and products. When planning consider the views of others, including intended users, to improve their work.</p> <p>Learn about inventors, designers, engineers, chefs and manufacturers who have developed ground-breaking products.</p> <p>When planning explain their choice of materials and components according to function and aesthetic.</p>	<p>Generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer-aided design.</p> <p>Use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose.</p> <p>Accurately apply a range of finishing techniques, including those from art and design.</p> <p>Draw up a specification for their design- link with Mathematics and Science.</p> <p>Plan the order of their work, choosing appropriate materials, tools and techniques. Suggest alternative methods of making if the first attempts fail.</p> <p>Identify the strengths and areas for development in their ideas and products.</p> <p>Know how much products cost to make, how sustainable and innovative they are and the impact products have beyond their intended purpose.</p>
<p><b>Working with tools, equipment, materials and components to make quality products</b></p>		<p>Begin to select tools and materials; use correct vocabulary to name and describe them.</p> <p>Build structures, exploring how they can be made stronger, stiffer and more stable. With help measure, cut and score with some accuracy.</p> <p>Learn to use hand tools safely and appropriately.</p> <p>Start to assemble, join and combine materials in order to make a product. Demonstrate how to cut, shape and join fabric to make a simple product. Use basic sewing techniques.</p>	<p>Select a wider range of tools and techniques for making their product safely. Know how to measure, mark out, cut and shape a range of materials, using appropriate tools, equipment and techniques.</p> <p>Start to join and combine materials and components accurately in temporary and permanent ways.</p> <p>Know how mechanical systems such as cams or pulleys or gears create movement. Understand how more complex electrical circuits and components can be used to create functional products.</p> <p>Continue to learn how to program a computer to monitor changes in the environment and control their products.</p>	<p>Confidently select appropriate tools, materials, components and techniques and use them.</p> <p>Use tools safely and accurately.</p> <p>Assemble components to make working models. Aim to make and to achieve a quality product.</p> <p>With confidence pin, sew and stitch materials together to create a product. Demonstrate when make modifications as they go along. Construct products using permanent joining techniques.</p> <p>Understand how mechanical systems such as cams or pulleys or gears create movement.</p> <p>Know how more complex electrical circuits and components can be used to create functional products and</p>

		<p>Start to choose and use appropriate finishing techniques based on own ideas.</p>	<p>Understand how to reinforce and strengthen a 3D framework. Sew using a range of different stitches, to weave and knit.</p> <p>Demonstrate how to measure, tape or pin, cut and join fabric with some accuracy. Begin to use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>	<p>how to program a computer to monitor changes in the environment and control their products.</p> <p>Know how to reinforce and strengthen a 3D framework. Understand that mechanical and electrical systems have an input, process and output.</p> <p>Use finishing techniques to strengthen and improve the appearance of their product using a range of equipment including ICT.</p>
<p><b>Evaluating processes and products</b></p>		<p>Evaluate their work against their design criteria. Look at a range of existing products explain what they like and dislike about products and why. Start to evaluate their products as they are developed, identifying strengths and possible changes they might make. With confidence talk about their ideas, saying what they like and dislike about them.</p>	<p>Evaluate their products carrying out appropriate tests. Start to their work both during and at the end of the assignment. Be able to disassemble and evaluate familiar products and consider the views of others to improve them. Evaluate the key designs of individuals in design and technology has helped shape the world.</p>	<p>Evaluate their products, identifying strengths and areas for development, and carrying out appropriate tests. Evaluate their work both during and at the end of the assignment. Record their evaluations using drawings with labels. Evaluate against their original criteria and suggest ways that their product could be improved. Evaluate the key designs of individuals in design and technology has helped shape the world.</p>
<p><b>End outcomes</b></p>	<p><b>EYFS</b> Use what they have learnt about media and materials in original ways, thinking about uses and purposes. Represent their own ideas, thoughts and feelings through design and technology... Explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.</p> <p><b>Years 1 and 2</b> Design products that have a clear purpose and an intended user. Make products, refining that design as work progresses. 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). Use materials to practise drilling, screwing, gluing and nailing materials to make products (such as wheeled vehicles).</p> <p><b>Years 3 and 4</b> 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. Understand the need for a seam allowance. Join textiles with appropriate stitching. Select the most appropriate techniques to decorate textiles. Choose suitable techniques to construct products or to repair items.</p> <p><b>Years 5 and 6</b> Design with the user in mind, motivated by the service a product will offer (rather than simply for profit). Make products through stages of prototypes, making continual refitments. Ensure products have a high-quality finish, using art skills where appropriate. 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 Develop a range of practical skills to create products and repair items (such as cutting, drilling, and screwing, nailing, gluing, filling and sanding).</p>			

