

Design and Technology at Ashlands Primary School

INTENT

At Ashlands Primary School, we want all children to think innovatively, to question and explore the practical world around them and to develop a positive, growth mind-set approach to their learning. Cooking and nutrition are an important part of the Design Technology curriculum; learning where our food comes from, how to prepare food and the importance of a healthy balanced diet gives children crucial life skills.

IMPLEMENTATION

Our Design Technology curriculum is based on Kapow units and has been personalised to support the learning of our pupils. This gives a real purpose to the children's learning and enables them to apply knowledge and skills from other subjects, such as mathematics, science, engineering, computing and art. In the EYFS, Design Technology is a predominately child-led area of provision; available all day, every day and includes a range of resources and media. In KS1 and KS2, typically, the subject is taught as a focus week so pupils can become fully immersed in all aspects of the design process. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts. Skills are developed using tools and techniques to create products which are fit for purpose and consider the needs of the client. The children are encouraged to work to a high standard to create a finished product which they are proud of. Cross-curricular links are made with other subjects, such as 'Shelters' linked to the Rainforest topic in Year 4 and 'Come Dine with Me' WW2 style in Year 6.

Enterprise Week is always a highlight of the Summer term. The children work collaboratively to create, make and bake products or experiences to sell to the rest of the school. It is a wonderful opportunity to apply many of the skills they have learnt in Design Technology throughout the year. In addition, pupils learn how to be resilient, resourceful, innovative and enterprising.









IMPACT






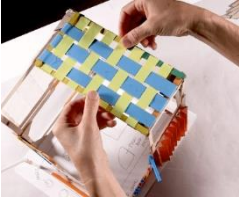


The children will have clear enjoyment and confidence in Design Technology, that they will apply to other areas of the curriculum.




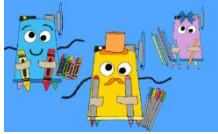


The children will develop skills and attributes they can use beyond school and into adulthood.

The children will develop a critical understanding of the practical and aesthetic aspects of the world around them.

	<p>Design and Technology subject overview</p> <p>Child-led learning plays a large part in the Early Years curriculum. Supporting the children in following and exploring their own interests allows for a greater depth of learning and understanding, and much higher levels of well-being and involvement.</p>				
<p>Nursery</p>	<p>DT skills are taught and developed through child-led learning and continuous provision available all day, every day.</p>				
	<p>Exploring materials through junk modelling, children begin to develop their scissor skills, awareness of different materials and joining techniques. The children are encouraged to tinker using a combination of materials and to explore various types of permanent and temporary joining techniques. They will learn the skills for model making and use tape, PVA glue, string, treasury tags etc as ways to join and connect things together.</p> <p>I can hold a pencil and use it to make marks. I can hold scissors correctly and make snips in paper. I can choose the tools I need for a job. I can select the materials I want to use to express my ideas. I can decide how I want to fix and join materials.</p>	<p>Through baking activities, the children begin to learn where their food comes from. They will taste a range of foods and begin to learn the skills to cut and prepare food safely, they will also use one-handed tools.</p> <p>I can manipulate dough and use one-handed tools to change it. I can stir, roll, squeeze, cut and shape when baking. I can use a safety knife to cut up fruit and vegetables. I can crack an egg. I can peel an orange or a banana. I can pour myself a drink from a jug. I can use one-handed tools e.g. spoon for stirring.</p>			
<p>Reception</p>	<p>Workshop: Junk modelling</p>	<p>Cooking and Nutrition</p>	<p>Textiles</p>	<p>Structures: Boats</p>	<p>Seasonal projects</p>
	<p>Pupils are encouraged to tinker using a combination of materials and joining techniques in the junk modelling area.</p> <p>Explore different materials freely, develop own ideas and find the things they need.</p> <p>Create models with others, sharing resources, and skills. Talk about their work.</p>	<p>Children explore the differences between fruits and vegetables using their senses (taste, texture, smell etc.).</p>	<p>Children develop and practise threading and weaving techniques using various materials and objects. The pupils apply their knowledge and skills to design and sew.</p>	<p>Children explore what is meant by waterproof, floating and sinking. They will experiment and make predictions with various materials to carry out a series of tests. They learn about the different features of boats before investigating shape and structures to build their own.</p>	<p>A series of seasonal projects to choose from to deliver across the year – covering Autumn, Christmas, Easter, Spring and Summer.</p>

	AUTUMN	SPRING	SUMMER
Year 1	<p><u>Structures: Constructing a windmill</u> Inspired by the song, 'Mouse in a windmill' design and construct a windmill for a client (mouse) to live in. Explore various types of windmill, how they work and their key features.</p> <p><u>Mechanisms: Christmas DT week</u> Explore slider mechanisms and the movement they output, to design, make and evaluate a moving Christmas card from a range of templates.</p>	<p><u>Textiles: Puppets (Spring 2)</u> Explore methods of joining fabric. Design and make a character-based hand puppet using a preferred joining technique, before decorating.</p> <p>Example theme: Storybook character.</p> 	<p><u>Cooking and nutrition: Fruit and vegetables</u> Learn to distinguish between fruit and vegetables and where they grow. Design a fruit and vegetable smoothie and accompanying packaging.</p> 
Year 2	<p><u>Cooking and Nutrition: A balanced diet</u> Name the main food groups and identify foods that belong to each group. Describe the taste, texture and smell of a given food. Construct a wrap that combines flavours, meets the design brief and their plan.</p>  <p><u>Textiles: Christmas DT week</u> Kapow unit - Pouches</p> 	<p><u>Structures: Baby Bear's chair</u></p> <p>Explore stability and methods to strengthen structures, to understand Baby Bear's chair weaknesses and develop an improved solution for him to use.</p>	<p><u>Mechanisms: Moving part of a castle</u> Explore levers, linkages and pivots through existing products and experimentation, use this research to construct and assemble a moving draw-bridge.</p> 
	AUTUMN	SPRING	SUMMER

<p>Year 3</p>	<p><u>Cooking and nutrition: Eating seasonally</u> Learn about various fruits and vegetables, and when, where and why they are grown in different seasons. Discover the relationship between colour and health benefits.</p>  <p><u>Textiles: Christmas DT week</u> Kapow unit - Mini cushions</p> 	<p><u>Structures: Constructing a castle (Roman Fort)</u> Identify and learn about the key features of a Roman fort, before designing and making a recycled-material Roman fort.</p>  <p><u>Electrical systems: Covered in Science Electric poster</u> This unit introduces children to various forms of 'Information design' before they are briefed to develop an electric museum display based on the Romans.</p>	<p><u>Mechanical systems: pneumatic toys</u> Explore pneumatic systems, then apply this understanding to design and make a pneumatic toy.</p>  <p><u>Digital world: Electronic charm</u> Covered in Computing Design, develop a program, house and promote a Micro:bit electronic charm to use in low-light conditions.</p> 
<p>Year 4</p>	<p><u>Structure: Pavilions</u> Investigate and model frame structures to improve their stability, then apply this research to design and create a stable, decorated pavilion.</p>  <p><u>Textiles: Christmas DT week</u> Kapow unit – fastenings Sew an envelope shaped purse/wallet</p>	<p><u>Mechanical systems: Make a slingshot car</u> Using a range of materials, design and make a car with a working slingshot mechanism and house the mechanism using a range of nets.</p>  <p><u>Electrical systems: Torches (Science)</u> Identify the difference between electrical and electronic products. Evaluate a range of existing torches and their features, then develop a new functional torch design.</p>	<p><u>Cooking and Nutrition: Adapt a recipe</u> Work in groups to adapt an existing biscuit recipe, whilst considering the cost of the ingredients and other expenses against a set budget.</p>  <p><u>Digital world – Mindful moments timer (Computing)</u> Explore what is meant by mindfulness and write design criteria to fulfil a brief to develop a programmed product for timing a mindful moment.</p>

	AUTUMN	SPRING	SUMMER
<p>Year 5</p>	<p>Mechanical systems: Pop-up book Create a functional four-page pop-up storybook design, using lever, sliders, layers and spacers to create paper-based mechanisms.</p>  <p>Textiles: Christmas DT week Cross stitch and keyring baubles</p> 	<p>Cooking and nutrition: What could be healthier? Discover the farm to fork process, understand the key welfare issues for rearing cattle. Compare the nutritional value of existing sauces and develop a healthier recipe.</p>  <p>Digital world: Monitoring devices Apply Computing knowledge and understanding to program a Micro: bit animal monitoring device. (Computing)</p>	<p>Structures: Bridges Test and analyse various types of bridge to determine their strength and stability. Explore material properties and sources, before marking, sawing and assembling a wooden truss bridge.</p> <p>Electrical systems: Doodlers (Computing) Explore how the design cycle can be approached at a different starting point, by investigating an existing product, which uses a motor, to encourage pupils to problem-solve and work out how the product has been constructed, ready to develop their own.</p>  <p>Link to Crumbles</p>
<p>Year 6</p>	<p>Structure: Playgrounds Research existing playground equipment and their different forms, before designing and developing a range of apparatus to meet a list of specified design criteria.</p>  <p>Textiles: Christmas decorations Using a combination of textiles skills such as attaching fastenings, appliqué and decorative stitches, children design, assemble and decorate a Christmas decoration for a gift.</p>	<p>Mechanisms: Automata Animals Design and make an automaton. Use simple cam mechanisms to make the automata move.</p>  <p>Cooking and Nutrition - Come Dine with me WW2 style Develop a three-course menu focused on ingredients available at the time, as part of a paired challenge to develop the best class recipes. Explore each key ingredient's farm to fork process.</p> <p>Electrical Systems (Science) Design and develop a steady hand game using a series circuit.</p>	<p>Digital world: Navigating the world Design and program a navigation tool to produce a multifunctional device for trekkers using CAD 3D modelling software. Pitch and explain the product to a guest panel. (Computing)</p> 