

Design and Technology Whole School Overview

Autumn	Spring	Summer
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EYFS	In Early Years, children exploring materials through junk modelling, children develop their scissor skills and awareness of different materials and joining techniques. Children begin to make verbal plans and material choices before starting, and problem solve while making their model. Children develop fine motor skills through a range of threading activities. They design items, considering what to include and why and then follow their designs. Considering the properties of materials through water play, children discover which materials are waterproof and whether they float or sink. Children learn about a range of foods including vegetables and where they come from. Children describe the taste of a range of foods and practise kneading and cutting skills and follow a range of recipes make foods before testing the final product.
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Year 1	<p>Mechanisms: Making a Moving Story Book</p> <p>Experimenting with sliders, pupils then plan and make three pages of a moving story book - drawing the page backgrounds, creating the moving parts and assembling it.</p> <p>Structures: Constructing a Windmill</p> <p>Designing, decorating and building a windmill, developing an understanding of different types of windmill, how they work and their key features. Looking at examples of windmills and exploring the functions that they carry out.</p>	<p>Textiles: Puppets</p> <p>Exploring different ways of joining fabrics before creating hand puppets based upon characters from a well-known fairytale. Developing technical skills of cutting, glueing, stapling and pinning.</p>	<p>Cooking and Nutrition: Fruit and Vegetables</p> <p>Handling and exploring fruits and vegetables and learning how to identify a fruit. Undertaking taste tests to identify ingredients for a smoothie they make, and designing and creating packaging for their smoothie.</p>
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<p>Year 2</p>	<p>Structures: Baby Bear's Chair</p> <p>Using the tale of Goldilocks and the Three Bears as inspiration, pupils help Baby Bear by making him a brand new chair, exploring different shapes and materials. When designing the chair, they consider his needs and what he likes</p>	<p>Mechanisms: Making a Moving Monster</p> <p>Learning the terms: pivot, lever and linkage, pupils then design a monster that will move using a linkage mechanism. Pupils practise making linkages and experiment with various materials to bring their monsters to life.</p> <p>Cooking and Nutrition: Food, and Balanced Diet</p> <p>Exploring and learning what forms a balanced diet, pupils taste test ingredient combinations from different food groups to inform a wrap design of their choice which will include a healthy mix of protein, vegetables and dairy.</p>	<p>Mechanisms: Fairground Wheel</p> <p>Design and create a functional fairground wheel, consider how the different components fit together so that the wheel rotates and the structure stands freely. Select appropriate material properties and develop their cutting and joining skills. Research existing structures and survey to further inform the design.</p>
<p>Year 3</p>	<p>Digital World: Electronic Charm</p> <p>Designing, coding and promoting a piece of wearable technology to use in low light conditions, developing their understanding of programming to monitor and control products to solve a design scenario.</p>	<p>Cooking and Nutrition: Eating Seasonally</p> <p>Discovering when and where fruits and vegetables are grown and learning about seasonality in the UK. Pupils respond to a brief to design a seasonal food tart using ingredients harvested in the UK in May and June.</p>	<p>Textiles: Cross-stitch and Appliqué</p> <p>Pupils learn two new sewing skills: cross stitch and appliqué and then apply these to the design, decoration and assembly of their own cushions or Egyptian collars.</p> <p>Structures: Constructing a Castle</p> <p>Learning about the features of a castle, pupils design and make one of their own. Using configurations of handmade nets and recycled materials to make towers and turrets and constructing a stable base.</p>

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<p>Year 4</p>	<p>Cooking and Nutrition: Adapting a Recipe Evaluating existing biscuits recipes, children then work in groups to adapt a simple biscuit recipe to create a biscuit suited to a chosen target audience. They ensure that their creation comes within a given budget of overheads and ingredients.</p> <p>Electrical Systems: Torches Applying their scientific understanding of electrical circuits, pupils design and create a torch made from recycled and reclaimed materials and objects. They then evaluate their products against a set design criteria.</p>	<p>Structures: Pavilions Exploring pavilion structures, learning what they are used for and investigating how to create strong and stable structures before designing and creating their own pavilions, complete with cladding.</p>	<p>Mechanical Systems: Making a Slingshot Car Using lollipop sticks, wheels, dowels and straws to create a moving car. Pupils build a car chassis and design the body of the car, giving consideration to how the shape will affect the car's air resistance. They then construct and test their cars.</p>
<p>Year 5</p>	<p>Mechanical Systems: Making a Pop-Up Book Creating a four-page pop-up story book design, incorporating a range of functional mechanisms that use levers, sliders, layers and spacers to give the illusion of movement through interaction.</p>	<p>Textiles: Waistcoats Selecting fabrics, using templates, pinning, decorating and stitching materials together to create a waistcoat.</p>	<p>Digital world: Navigating the World Programming a navigation tool to produce a multifunctional device for trekkers. Combining 3D virtual objects to form a complete product concept in 3D computer-aided design modelling software.</p>
<p>Year 6</p>	<p>Cooking and Nutrition: What Could be Healthier? Researching and preparing a three-course meal and taste-testing and scoring their outcomes. Researching the journey of their main ingredient from 'farm to fork' and writing a favourite recipe.</p>	<p>Structure: Playgrounds Designing and creating a model for a new playground featuring five apparatus, made from three different structures. Using a footprint as the base, practising visualising objects in plan view and including natural features within their designs.</p>	<p>Electrical Systems: Doodlers Further exploring series circuits and introducing motors. Pupils investigate existing products and use their problem-solving skills to establish how they think the products have been constructed, before then creating their own doodler.</p>