

Design and Technology Subject Narrative

Design and technology overview

The design and technology projects are well sequenced to provide a coherent subject scheme that develops children's designing, planning, making and evaluating skills. Each project is based around a design and technology subject focus of structures, mechanisms, cooking and nutrition or textiles. The design and technology curriculum's electronic systems and IT monitoring and control elements are taught in our science and computing projects. Where possible, meaningful links to other areas of the curriculum have been made. For example, in Year 5, the cooking and nutrition project *Eat the Seasons* is taught alongside the geography project *Sow, Grow and Farm*. All the projects follow a structure where children are introduced to key concepts and build up knowledge and skills over time, using a more comprehensive range of equipment and building, cutting, joining, finishing and cooking techniques as they progress through school. All projects contain focused, practical tasks in the Develop stage to help children gain the knowledge and skills needed to complete their Innovate tasks independently. Throughout Key Stages 1 and 2, children build up their knowledge and understanding of the iterative design process. They design, make, test and evaluate their products to match specific design criteria and ensure they fit their purpose. Throughout the projects, children are taught to work hygienically and safely.

Key Stage 1

In the autumn term of Year 1, children begin to learn about food sources in the project *Chop, Slice and Mash* and use simple preparation techniques to create a supermarket sandwich. In the spring term project *Taxi!*, they learn the term 'mechanism' and assemble and test wheels and axles. In the summer term, children begin to learn about structures in the project *Shade and Shelter* before designing and making a shelter. In the autumn term of Year 2, children complete the project *Beach Hut*, where they develop their knowledge of structures further, learning to cut, join and strengthen wood for the first time. In the spring term project, children begin to develop their understanding of textiles in *Cut, Stitch and Join*. They learn to sew a simple running stitch, use pattern pieces and add simple embellishments. They also learn more about food, through the topic *Remarkable Recipes*, where they find out about food sources, follow recipes and learn simple cooking techniques. In the summer term, the children continue to learn about mechanisms in the project *Push and Pull* by using sliders, levers and linkages in products.

Lower Key Stage 2

In the autumn term of Year 3, children complete the project *Making it Move*, they extend their understanding of mechanisms by exploring cams and using joining and finishing techniques to make automation toys. In the spring term project, children continue to learn about food, understanding the concept of a balanced diet and making healthy meals in the project *Cook Well, Eat Well*. In the summer term project *Greenhouse*, they continue to

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develop their knowledge of structures, using triangles and braces for strength. They design and build a greenhouse, using their understanding of opacity and transparency and the needs of plants from science learning to inform their design. In the autumn term of Year 4, children complete the project Tomb Builders, where they build on their knowledge of mechanisms, learning about six simple machines and using their knowledge to create a lifting or moving device prototype. During the spring term project Functional and Fancy Fabrics, children continue to explore textiles, learning about the work of William Morris before designing, embellishing and finishing a fabric sample. In the summer term, they continue to develop their understanding of food in the project Fresh Food, Good Food. They learn about food safety and preservation technologies before designing and making packaging for a healthy snack.

Upper Key Stage 2

In the autumn term of Year 5, the children learn more about structures in the project Architecture, studying the history of architecture and developing new ways to create structural strength and stability. In the spring term project, children deepen their understanding of mechanisms by studying pneumatic systems in the project Moving Mechanisms. They learn about the forces at play and create a prototype for a functional, pneumatic machine. In the summer term, Eat the Seasons, they continue to explore food and nutrition, learning about seasonal foods and the benefits of eating seasonally. In the autumn term of Year 6, children complete the project Engineer, where they consolidate their knowledge of structures, joining and strengthening techniques and electrical systems by completing a bridge-building challenge. In the spring term, children learn about processed and whole foods in the project Food for Life, creating healthy menus from unprocessed foods. In the summer term project Make Do and Mend, they extend their knowledge of textiles by learning new stitches to join fabrics and using pattern pieces to create a range of products.

Throughout the design and technology scheme, there is complete coverage of all national curriculum programmes of study.