Goosewell Primary Academy

Rise To Greatness

Design and Technology Curriculum

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 explicitly taught in our science projects to ensure the links between the subjects are highlighted. 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.

EYFS

Children's design and technology knowledge begins in the early years. The children develop small motor skills in order to use a range of tools competently, safely and confidently alongside the early learning goal 'physical development'. Within the early learning goal 'expressive arts and design', the children return to and build on previous learning, refine ideas and develop their ability to represent them. This is developed through linking parts in Mobilo, following a plan or creating their own moving model. Children create collaboratively through sharing ideas, resources and skills. In the early years, children also explore materials with different properties when working within the early learning goal 'knowledge of the world'.

Key Stage 1

In the autumn term of Year 1, children begin to learn about structures in the project 'Shade and Shelter' before designing and making a shelter. 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 food sources in the project 'Chop, Slice and Mash' and use simple preparation techniques to create a supermarket sandwich.

In the autumn term of Year 2, the children begin learn about mechanisms in the project 'Push and Pull' by using sliders, levers and linkages in products. They make models of each mechanism before designing and making a greetings card with a moving part. In the spring term, 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. In the summer term, children learn more about food in the project 'Remarkable Recipes', where they find out about food sources, follow recipes and learn simple cooking techniques.

Design and Technology Curriculum

Lower Key Stage 2

In the autumn term of Year 3, children continue to learn about food, understanding the concept of a balanced diet and making healthy meals in the project ‘Cook Well, Eatwell’. In the spring term project ‘Making it Move’, children extend their understanding of mechanisms by exploring cams and using joining and finishing techniques to make automaton toys. In the summer term project ‘Greenhouse’, they continue to 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 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. 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 project ‘Tomb Builders’, they build on their knowledge of mechanisms, learning about six simple machines and using their knowledge to create a lifting or moving device prototype. They also explore and use electrical systems and IT monitoring and control in the science project ‘Electrical Circuits and Conductors’ for the first time.

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. They use computer-aided design and consolidate their making skills to produce scale models. In the spring term, 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 project ‘Eat the Seasons’, children continue to explore food and nutrition, learning about seasonal foods and the benefits of eating seasonally. They also explore the electrical conductivity of materials before making products incorporating circuits in the science project ‘Properties and Changes of Materials’.

In the autumn term of Year 6, during the project ‘Engineer’, children consolidate their knowledge of structures, joining and strengthening techniques and electrical systems by completing a bridge-building challenge. In the spring 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. In the summer term project, children learn about processed and whole foods in the project Food for Life, creating healthy menus from unprocessed foods.