Willow Primary Academy

Design and Technology Curriculum

"Design is thinking made visual" – ***Saul Bass***

INTENT

At Willow Primary Academy our design and technology curriculum is designed to prepare children for the developing world. The subject encourages children to become creative problem-solvers, both as individuals and as part of a team. Through the study of design and technology children combine practical skills with an understanding of aesthetic, social and environmental issues, in order to design and make a product. Evaluation is an integral part of the design process and allows children to adapt and improve their product, this is a key skill which they need throughout their life. Design and Technology helps all children to become discriminating and informed consumers and potential innovators. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art.

We believe that the teaching of food and nutrition is of great importance and holds great relevance in current times. For this reason, children will study a food and nutrition unit every year. By instilling a love of cooking in pupils, we will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

IMPLEMENTATION

Delivery

- Teachers plan effectively using our bespoke design and technology curriculum.
- Teachers map out learning using the timetable tool on Cornerstones Maestro.
- The key elements that make up the teaching and learning approach for design and technology:
    1. Engage
    2. Design
    3. Make
    4. Evaluate
- Throughout the design and technology curriculum, there is complete coverage of all national curriculum programmes of study.
- Unit outcomes and required content enable good planning, progression and consistency across the school.
- Formative assessment takes place during learning to address misconceptions, identify strengths and gaps and inform next steps.
- Summative assessment takes place at the end of the Autumn, Spring and Summer term on Insight to identify what children have achieved and not achieved. This data is analysed by the Head Teacher, Assessment Lead and Art and Design Subject Lead to determine next steps.
- Cross-curricular links are used whenever possible, i.e., mathematics and science.

Progression

- The DT curriculum is designed to progressively develop the children's skills in DT from Reception through to year 6.
- Each unit builds on prior learning across key strands, including EYFS.
- Each unit has a clear overview outlining key concepts, knowledge, skills and vocabulary to be taught and evaluated to measure impact.
- Adaptive teaching is used to enable every pupil to meet the learning objective.
- The design and technology units are well sequenced to provide a coherent subject scheme that develops children's designing, planning, making and evaluating skills.
- Each unit 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.
- Where possible, meaningful links to other areas of the curriculum have been made. For example, the year 6 design and technology unit, 'Make Do and Mend' is taught alongside the year 6 history unit, 'Britain at War'.
- All the units 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 units contain focused, practical tasks in the engage stage to help children gain the knowledge and skills needed to complete their design and make tasks as independently as possible.
- Throughout Key Stages 1 and 2, children build up their knowledge and understanding of the repetitive design process. They engage with, design, make, test and evaluate their products to match specific design criteria and ensure they fit their purpose. Throughout the units, children are taught to work hygienically and safely.
- In EYFS, children have a number of opportunities to explore a range of tools and equipment to perform practical tasks safely, e.g., cutting and joining throughout provision. They regularly share their creations, explaining the processes they've used.
- In Year 1, children begin to learn about structures in the unit 'Shade and Shelter' before designing and making a shelter. They learn the term 'mechanism' and assemble and test wheels and axles. 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 Year 2, children learn more about food, where they find out about food sources, follow recipes and learn simple cooking techniques. They develop their knowledge of structures further, learning to cut, join and strengthen wood for the first time. Children also begin to develop their understanding of textiles. They learn to sew a simple running stitch, use pattern pieces and add simple embellishments.
- In Year 3, children continue to learn about food, understanding the concept of a balanced diet and making healthy meals. Children extend their understanding of mechanisms by exploring cams and using joining and finishing techniques to make automaton toys. In the summer term unit 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 Year 4, children continue to develop their understanding of food. They learn about food safety and preservation technologies before designing and making packaging for a healthy snack. Children continue to explore textiles, learning about the work of William Morris before designing, embellishing and finishing a fabric sample. 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 unit Electrical Circuits and Conductors for the first time.

- In Year 5, 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. Children continue to explore food and nutrition, learning about seasonal foods and the benefits of eating seasonally. In the summer term, they learn more about structures, 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. They also explore the electrical conductivity of materials before making products incorporating circuits in the science unit Properties and Changes of Materials. In Year 6, children learn about processed and whole foods, creating healthy menus from unprocessed foods. Children consolidate their knowledge of structures, joining and strengthening techniques and electrical systems by completing a bridge-building challenge. They extend their knowledge of textiles by learning new stitches to join fabrics and using pattern pieces to create a range of products.

IMPACT

We ensure the children at Willow develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. They build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and products for a wide range of users and critique, evaluate and test their ideas and products and the work of others. Pupils understand and apply the principles of nutrition and learn how to cook. Children will design and make a range of products. A good quality finish will be expected in all design and activities made appropriate to the age and ability of the child. Throughout, children learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Long Term Plan – 2024 – 2025

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
FS	Evident in all projects and through enhanced provision					
Year 1	Chop, slice, mash Cooking and Nutrition		Taxi Mechanisms		Shade and shelter Structures	
Year 2	Remarkable Recipes Cooking and Nutrition		Cut, stich, join Textiles		Beach Hut Structures	
Year 3	Making it move Mechanisms		Greenhouse Structures		Cook well, Eat well Cooking and Nutrition	
Year 4	Functional and Fancy fabric Textiles		Fresh food, good food Cooking and Nutrition		Tomb builders Mechanisms	
Year 5	Eat the Seasons Cooking and Nutrition		Architecture Structures		Moving Mechanism Mechanisms	
Year 6	Engineer Structures		Food for Life Cooking and Nutrition		Make Do and mend Textiles	