



Holy Trinity Church of England (Aided) Primary School

Curriculum Rationale

Design and Technology

The Best for Every Child - a Unique Child of God

See how much the Father has loved us! His love is so great that we are called God's children — and so, in fact, we are (1 John 3:1)

Intent

An inspiring, relevant and practical subject, Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and collaboratively. High-quality Design and Technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation. At Cookridge Holy Trinity, we encourage children to use their creativity and imagination, to design and make purposeful products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. We aim to, wherever possible, link work to other areas of the curriculum particularly science, computing and art. Children are given opportunities to reflect upon and evaluate past and present design technology, its uses and effectiveness. Concentrating on local and global themes from EYFS to Year 6, we aim to provide children with an exciting, relevant and challenging curriculum with a variety of enrichment opportunities. The knowledge and skills-based curriculum offered encourages them to become innovators and risk-takers.

Implementation

Through a variety of creative and practical activities, we teach the knowledge, understanding and skills needed to engage in an iterative process of designing and making, making rich connections to the wider curriculum where possible. The children work in a range of relevant contexts (for example home, school, leisure, culture, enterprise, industry and the wider, global environment.) Key knowledge and skills for D&T have been mapped across the school from EYFS to Year 6 to ensure a rich coverage and progression between year groups. This also ensures that there is a context for the children's work in Design and Technology; that they learn about real life design projects and designers to influence their own ideas, as well as developing their skills throughout the programme of study. In addition, 'Cooking in the Curriculum' is taught every term in all year groups and as part of our 'Healthy Schools' status we aim to cook healthy, savoury meals.

Aims of Design and Technology

In Design and Technology, our children will have the opportunity to:

- **Master practical skills**

This concept involves developing the skills needed to make high quality products in Construction, Textiles, Mechanical and Electrical systems, Computing and Cooking.

- **Design, make, evaluate and improve**

This concept involves developing the process of design thinking and seeing design as a process.

- **Take inspiration from design throughout history**

This concept involves appreciating the design process that has influenced the products we use in everyday life.

Reception

Our Reception classes follow the new EYFS statutory framework (2021) where Design and Technology forms part of the learning children acquire under the 'Expressive Arts and Design' branch of the Foundation Stage curriculum. Design and Technology is embedded throughout their 'Curriculum Goals' but in particular the aim is for children to 'become a Designer'; building the foundation of their design skills through first-hand experiences. They are encouraged to explore, observe, solve problems, think critically, make decisions and talk about why they have made their decisions. Through the use of exciting and inspiring topics, teachers will plan the environment to aid the development of children's design and technology skills. Children are inspired to construct products with a purpose in mind, using a range of different materials in their provision. They experiment through play, learning how to join materials in different ways. In the summer term, they learn how to use a slot and tab method with card to make a moving plant in a pot. Through using a range of tools to make models, children will learn about planning and adapting initial ideas to make them better. Children have the opportunity to develop their cooking skills and techniques by making porridge and gingerbread men.

Year One/Year Two

Building on the children's practical skills in Reception, Key Stage 1 children follow the framework outlined in the National Curriculum. At the heart of our teaching and learning in Design and Technology is the design, make and evaluate process. Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in the process of designing, making and evaluating. They learn about different designers and evaluate designs before embarking on a new design project of their own. In Year One, children build on their practical skills by creating a structure of the Emerald City linked to their learning on the Wizard of Oz. In the Summer term, they also create a toy linked to their topic of Jack and the beanstalk using levers, wheels and winding mechanisms. They experiment with weaving materials when creating fish puppets. In Year 2, children design and make their own Victorian toy using wheels and axles. They also get the opportunity to design and make slippers, and evaluate their ideas and products against design criteria as well as considering the views of others to improve their work. Additionally, as part of their topic of Charlie and the Chocolate Factory, children in Year Two design their own 3D chocolate box packaging using CAD software. To build on the cooking skills that they learnt in reception, children in KS1 are taught how to cook and apply the principles of nutrition and healthy eating. A love for cooking is instilled into our children through a range of exciting cooking opportunities. Children in Year 1 make smoothies, scones and bean wraps whilst children in Year 2 make bread, carrot cake and a range of healthy Indian snacks. Children will also focus on where food comes from throughout their cooking experiences.

Year Three/Year Four

In Lower Key Stage 2, children continue to develop their Design and Technology skills through a range of learning opportunities. When working with different materials, they master techniques such as cutting materials accurately using appropriate tools and selecting appropriate joining techniques. In Year 3, linked to their topic on Ancient Greece, children design and create their own labyrinths and use the 'Beebots' to programme and control. As their work progresses, they refine and adapt their ideas to improve the final product. They design and make a lever and linkages system to create a rainforest animal in the Spring term and investigate, design and make compasses in their topic on Explorers. In Year Four, children create series and parallel circuits linked to their science learning on electricity, and choose suitable techniques to design and construct an electrical board game. Children have the opportunity to enhance their practical stitching skills when working with textiles and create Roman purses as part of their History learning on the Romans. Their CAD skills are further developed when designing and making an Egyptian pyramid. For cooking, Year 3 create a peach cheesecake after reading James and the Giant peach as part of their literacy work. They also make a Stone Age stew and some healthy Greek food. Children will learn how to prepare ingredients hygienically using appropriate utensils, measure ingredients accurately and assemble or control the temperature of the oven or hob to cook ingredients. Year Four pupils design and make a pizza linked to their topic of Italy with the freedom to choose whatever healthy

pizza toppings they would like for their design. They also get the opportunity to evaluate their pizzas against the product design and by creating a questionnaire for their peers to fill in. They also design and make a meal for a passenger on the Titanic as well as making Egyptian bread.

Year Five/Year Six

In Upper Key Stage 2, the design, make and evaluate process is embedded in all the projects children work on, with a focus on designing with the user in mind, motivated by the service a product will offer. Building on the textile skills from Lower Key Stage 2, Year 5 pupils create Saxon brooches with an awareness of commercial appeal, which links with their learning on the Anglo-Saxons. Also, Year 5 children research, design and build Viking long ships and evaluate these against clear success criteria, whilst also considering the views of their peers. They use Scratch software to create a timed racing game, linked with the computing curriculum. In Mechanics, they design and make catapults, also linking with Science. In Year 6, the children research, design, plan and create WWII fighter planes and bake ration biscuits to link with their history topic of World War II. The children make the WWII fighter planes through stages of prototypes, making continual refinements as work progresses. They develop a range of practical skills to create their final product such as cutting, gluing, filing and sanding. As part of their topic on mountains, Year 6 pupils design their own cable cars and use prototypes, cross-sectional diagrams and computer aided designs to represent their plan. We have recently incorporated the use of 'Crumble' software to experiment with electrical and mechanical systems for these cable cars. Additionally, in Textiles, pupils create pennants and use appropriate tools to cut and shape different materials. They join textiles with a combination of stitching techniques and decorate the pennant considering the visual and tactile effects of different materials. In upper KS2, pupils continue to hone their cooking and baking techniques and learn about the importance of correct storage and handling of ingredients. The cooking they do links to their work in maths, as they are required to measure accurately and calculate the rations of ingredients to scale up or down from a recipe. In Cooking, Year 5 make Cheesecake cookies, Moon Rock Cakes and Viking Stew and in Year 6, as well as the ration biscuits they make Hobbit Hash.

Impact

By the time children leave Holy Trinity they will:

- develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world.
- build and apply a repertoire of knowledge, understanding and skills in order to design and make high-quality prototypes and purposeful products for a wide range of users and critique, evaluate and test their ideas and products and the work of others.
- understand and apply the principles of nutrition and learn how to cook.
- 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.
- become risk taking resourceful, innovative, enterprising and capable citizens.
- develop a critical understanding of D&T, its impact on daily life and the wider world through evaluation of past and present D&T.