

Design and Technology at Clifton Primary School

Subject lead: Ayesha Ali

Intent and rationale

The intention of the Design and Technology curriculum at Clifton Primary School is to encourage children to learn, think and intervene creatively to solve real and relevant problems within diverse contexts. It is an inspiring, rigorous and practical area of the curriculum and we endeavour to allow children to take risks and become resourceful, as well as innovative and capable thinkers. They will use their creativity and imagination to design and make products, with consideration of the views and values of others as well as their own.

At Clifton, we have three main strands within our Design and Technology curriculum. These are: Design, Make and Evaluate. Technical knowledge as well as cooking and nutrition are embedded within the 'Make' strand as these include key practical concepts that our children are taught to apply through hands-on experiences. Children will develop the knowledge and skills learnt within each strand as they progress through their primary education. Each strand increases in complexity and depth.

Children in the Early Years Foundation Stage will be given the opportunity to construct products with a clear purpose in mind. They will be exposed to a range of simple tools, techniques and materials, and learn to select those which meet their interests and enquiries. Key vocabulary will be given priority, particularly for those children who begin school with limited experiences with the English language. These are the essential building blocks that our children need at the early stages of their education, so that they are well equipped to delve into the requirements of the National Curriculum.

The knowledge and skills outlined above are further developed in Key Stage 1. Children will use design criteria to design a product which is purposeful, functional and appealing through discussion and drawings. They will develop their ability to select from and use a range of tools and materials, explore methods to build structures and make them more secure, as well as use simple mechanisms. For example, in Year 1, children will use levers and sliders to make a moving picture of an animal for a book as part of their 'Animal Antics' topic. This was carefully chosen to increase our children's inspiration and enthusiasm with a variety of reading material by exploring and evaluating existing moving picture books. Mechanisms will also be used in Year 2 in their 'Marvellous Materials' topic when making a toy vehicle using wheels and axles. Children will be encouraged to think of the advances in our everchanging modern world, and how their product will incorporate these. Basic principles of a healthy and varied diet will be learnt when making a fruit salad in Year 1 and a healthy dip in Year 2, as well as where food comes from. Children will think about the fruit and vegetables grown at school in our allocated spaces for Key Stage 1, and how these can be used in their products. Children will evaluate their finished products against design criteria.

As part of their iterative process of designing and making, children in Key Stage 2 will use research to develop more specific design criteria to inform the design of products which are fit for purpose and meet the needs of intended individuals or groups. For example, Year 3 will make a toy vehicle for an infant to use on a flight as part of their 'Gateways to the World' topic. This will build on the knowledge learnt in the previous year about our modern

world. Children will also make links to their own experiences by looking at products that are available in our local area which meet the interests of infants today. Here, mechanical systems will be revisited by using cams in their product. Designs in Key stage 2 will be communicated through more detailed, annotated sketches, exploded diagrams, models and prototypes. Children will learn to use a wider range of tools, equipment, materials and components. Components will include textiles, studied in Year 3 when adding embellishments to a T-shirt through simple sewing techniques, to advertise Cadbury World which is a popular visitor attraction in our home city. The children will be given opportunity to strengthen this skill in Year 4 when learning to use different sewing techniques to make an Egyptian collar linked to their 'Temples, Tombs and Treasures' topic.

Electrical systems will be used in both Years 5 and 6 where children will embed their knowledge learnt in science to create a simple circuit for a torch, and a more complex circuit for a steady hand game respectively. This has been chosen as it is a key theme which ignites our children's interests and allows them to make cross-curricular links. Subsequently, we endeavour that our children will be given opportunities to apply knowledge across different areas of the curriculum. Years, 5 and 6 will also enhance their knowledge of nutrition and seasonality, implementing these within their cooking. They will make use of the research skills they have learnt to explore ingredients that are available in our area according to seasons as well as the nutritional factors of ingredients to inform designs. Evaluative skills will flourish through engagement with thorough investigation and analysis of existing products as well as their own, with consideration of the views of others.

Through the key concepts and ideas outlined above, we strive to enable our children to become competent in their contributions and creativity within Design and Technology. We hope to instil a love for learning through exciting and motivating lessons which give our children valuable experiences and transferable skills.

Implementation

The intent outlined above is implemented through effective teaching, learning and assessment. Our curriculum has been pieced together and outlined in a progression document which highlights key learning in all year groups. It also ensures that the knowledge and skills taught are a direct progression from the previous year, and therefore our children's abilities are developed effectively. Staff members from each year group are expected to use the progression document when planning their projects each term so that no learning opportunities are overlooked and there is clear continuity in learning.

The progression document indicates the subject specific vocabulary which is expected to be taught in each year group. Teachers ensure that the previously taught vocabulary is revisited, enriched and extended where appropriate, in order to embed learning and deepen understanding. There is expectation for all children to use this vocabulary within lessons, both in their verbal discussions and recorded tasks, which is consistently assessed and addressed by teachers.

Design and Technology lessons are widely enjoyed by children at Clifton. The evaluation of existing products allows children to have first-hand experiences with concrete objects. Where possible, we aim to include 'real' experiences such as a design brief based on a real-life situation. This brings learning to life and enables our children to investigate products

more thoroughly. A better understanding is gained, and as a result, children are more likely to use it to inform their individual designs. Children in Key Stage 2 conduct their own research, which also gives them a better perception of the attributes they need to include for their intended users. Where possible, we encourage children to conduct primary research as this is a fantastic opportunity to develop their oracy skills, which is currently a whole-school focus. Oracy is considered central to the design and evaluative processes at Clifton, as children are expected to communicate their ideas to peers and teachers in a proficient manner, in accordance to their stage in education. Having engaged with these processes, children are more likely to remember and embed what they have learnt, and readily continue their learning when Design and Technology is revisited in the next term.

Design and Technology is an area of the curriculum which champions its ability to give children ownership over their own learning. Children are taught and trusted to create their own designs, make products with the use of appropriate tools, material and components, and evaluate them against their original design criteria. By providing children with the necessary support within each of these stages, for example, guiding learning by ensuring that a wide range of existing products are explored, scaffolding learning where necessary, and ensuring a variety of equipment is readily available to use safely, we can champion children's abilities and outcomes. This will encourage future self-motivated and confident learners who are more likely to encounter successful learning in subsequent stages of education as well as in the wider world.

Successful learning is identified through effective assessment. Formative assessments play a vital role in developing and enhancing children's learning. In Design and Technology lessons, teachers assess children's learning by effective questioning and discussion as well as assessment of children's technical skills. Where necessary, teachers provide direct feedback so that immediate adaptations can be made to improve standards of learning. For example, if a design has not met all criteria, or not fit for the intended purpose, this is addressed and corrected before making the product. Teachers in all year groups will also assess against key learning to ensure that children have embedded what has been taught. Where there are gaps, children will be given opportunities to practise and refine skills.

In order to stimulate high-quality teaching and learning, there must be a shared enthusiasm for Design and Technology by all teachers as well as children. This is evident at Clifton though the shared commitment to provide and participate in engaging lessons which stretch and challenge children's abilities and thinking. Our children are supported to meet the high expectations which are set across the school, develop their practical and technical skills, as well as engage and use their developing vocabulary in appropriate contexts.