"Learning with our head, heart and hands so that we can experience life in all its fullness"

Design and Technology

Intent, Implementation and Impact

Intent

We believe that "it's through mistakes that you actually can grow. You have to get bad in order to get good." Paula Scher

"Design is not just what it looks like and feels like. Design is how it works." Steve Jobs

At Matching Green CE Primary School we use a scheme of work that aims to inspire our children to be innovative and creative thinkers who have appreciation for the product design cycle through ideation, creation and evaluation. We want our children to develop the confidence to take risks, through drafting design concepts, modelling, and testing and to be reflective learners who evaluate their work and the work of others. Through our curriculum, we aim to build an awareness of the impact of design and technology on our lives and encourage children to become resourceful, enterprising citizens who will have the skills to contribute to future design advancements.

Design and Technology helps you to teach Maths and English and indeed other subjects in the curriculum in a fun manner and puts these subjects into context making them easier to digest and more understandable for our learners. Design and Technology gives children the opportunity to develop skills, knowledge and understanding of designing and making functional products. We feel it is vital to nurture creativity and innovation through design, and by exploring the designed and made world in which we all live and work.

Our children will be taught Design and Technology in a way that ensures progression of skills, and follows a sequence to build upon and reinforce previous learning, make connections and develop subject specific languages; making them successful designers.

Implementation

The Design and Technology National Curriculum outlines the three main stages of the design process: design, make and evaluate. Each stage of the design process is underpinned by technical knowledge which encompasses the contextual, historical, and technical understanding required for each strand. Cooking and nutrition has a separate section, with a focus on specific principles, skills and techniques in food, including where food comes from, diet and seasonality.

The National Curriculum organises the Design and Technology attainment targets under five strands:

- Design
- Make
- Evaluate
- Technical knowledge
- Cooking and nutrition

Our Class Curriculum Coverage document shows when each of the units are covered throughout our two year rolling cycle alongside National Curriculum objectives. We have also broken down larger objectives into smaller, more manageable objectives.

As we have mixed aged classes the topics have been selected to match up with the overall curriculum topic being taught that term, whilst also ensuring that there is a broad and equal coverage throughout each cycle and that children are able to progress and develop their design skills.

Our Progression of Skills document shows the skills that are taught within each year group and how these skills develop to ensure that objectives are securely met by the end of each key stage.

Our Design and Technology Vocabulary document outlines the key language children will be exposed to throughout the unit of work.

Through the 5 strands, children respond to design briefs and scenarios that require consideration of the needs of others, developing their skills in six key areas:

- Mechanisms
- Structures
- Textiles
- Cooking and nutrition (food)
- Electrical systems (KS2 only)
- Digital World (KS2 only)

Each of these areas follows the design process (design, make and evaluate) and has a particular theme and focus from the technical knowledge or cooking and nutrition section of the curriculum. Key skills are visited several times with increasing complexity in a spiral curriculum model; allowing children to revise and build on their previous learning.

Lessons incorporate a range of teaching strategies from independent tasks, paired and group work including practical hands-on, computer based and inventive tasks. This variety means that lessons are engaging and appeal to those with a variety of learning styles. Differentiated guidance is available for every lesson to ensure that lessons can be accessed by all children and opportunities to stretch children's learning are available when required. Knowledge organisers for each unit support children in building a foundation of factual knowledge by encouraging recall of key facts and vocabulary.

Linked to the scheme of work there are also videos, design techniques modelled by experts and detailed subject knowledge to equip and upskill teachers so that they are confident in their teaching; this provides the opportunity for teachers to develop their subject knowledge and supports ongoing CPD. This provides all teachers with the ability to deliver high quality design and technology lessons.

Design and Technology is taught as a block of lessons over a short period of time (1-3 days typically) this allows children to become fully immersed in their topic, to refine, improve and properly evaluate their piece of work. The SLT and teachers of Matching Green CE Primary School found that this was a far better way of teaching a unit as opposed to one lesson a week. We found that there was little cohesion between the lessons with interest and enthusiasm around the topic waning towards the end. This allows teachers and children to put their full efforts and attention into the unit. Where relevant teachers plan and deliver

cross curricular lessons linked to this topic; e.g. researching a designer further and writing a biography or learning about a certain period in history to understand some background context are just some brief examples or creating a survey on a particular product to gain a clearer understanding about what functionality people want from a design.

At certain times throughout the academic year the whole school come off topic and immerse themselves in a whole school theme e.g. 'Fantastic Plastic', 'The Olympics' throughout these mini topics time is given for children to create projects.

Children are also given the opportunity to share their design and technology work in their own class exhibition. Parents/Carers are invited in to view their children's work which is displayed along our corridor and in our school hall.

Impact

The design and technology curriculum has been designed in a way that involves the children in the evaluation, dialogue and decision making about the quality of their outcomes and the improvements they need to make. By taking part in regular discussions and decision making processes, children will not only know facts and key information about designers, design and technology, but they will be able to talk confidently about their own learning journey, have higher metacognitive skills and have a growing understanding of how to improve.

Children are able to demonstrate some of the skills that they have learnt through the double page spreads in their topic books and also through the class exhibitions.

The impact of the teaching and learning is monitored through both formative and summative assessment opportunities. Each lessons provides teachers with strategies to assess children against the learning objective and at the end of each unit there is a knowledge catcher and a quiz.

Teachers use a range of Assessment for Learning strategies to tailor their next steps in the teaching and learning cycle. Teachers assess children's attainment alongside the National Curriculum objectives using an agreed code.

The expected impact of the Design and Technology curriculum at Matching Green CE Primary School is that children will:

- Understand the fictional and aesthetic properties of a range of materials and resources
- Understand how to use and combine tools to carry out different processes for shaping, decorating and manufacturing products
- Build and apply a repertoire of skills, knowledge and understanding to produce high quality, innovative outcomes, including models, prototypes, CAD, and products to fulfil the needs of users, clients and scenarios.
- Understand and apply the principles of healthy eating, diets, and recipes, including key processes, food groups and cooking equipment
- Have an appreciation for key individual, inventions, and events in history and of today that impact our world
- Recognise where our decisions can impact the wider world in terms of community, social and environmental issues
- Self-evaluate and reflect on learning at different stages and identify areas to improve
- Meet the end of key stage expectations outlined in the National Curriculum for Design and Technology.

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- Children will learn how to take risks, becoming resourceful, innovative and enterprising citizens
- They will develop a vertical understanding of the impact of design and technology on daily life and the wider world through the evaluation of past and present design and technology
- Meet the end of key stage expectations outlined in the National Curriculum for Computing.
- To understand that high quality design and technology education makes an essential contribution to the creativity, culture, wealth and wellbeing of the nation.