Castlefields Primary School Design and Technology Statement

Intent

At Castlefields school, the intention of the design and technology curriculum is to inspire the children to use their creativity and imagination, as well as their subject knowledge and technical skills, to design and make products to solve real and relevant problems within a variety of contexts. The design and technology curriculum is shaped to ensure that it is fully inclusive to every child regardless of their learning needs. In design and technology lessons, pupils can apply and revisit a broad range of subject knowledge and practical skills taught in many other curriculum areas such as: mathematics, science, engineering, computing, and art. Through evaluation of past and present design and technology, pupils develop a critical understanding of the impact of design and technology on daily life and the wider world. Children learn to take risks and become resilient, resourceful, and innovative in their general approach to learning. We want our children to be prepared for the next stage of learning in design and technology in KS3, as well as developing skills relevant to their adult life in an ever-changing world where the development of new products and technologies will play a vital role in our future society.

The National Curriculum for design and technology aims to ensure that all pupils:

- 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 products for a wide range of users.
- 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.

Implementation

At Castlefields we have developed a comprehensive and well-sequenced design and technology curriculum following the National Curriculum and the Early Years Foundation Stage framework and based upon the Kapow! Primary scheme which forms part of our whole school broad and balanced curriculum. The design and technology units we have chosen to study from the scheme build upon the children's previous knowledge, skills and experience in design and technology and in other areas of learning across the curriculum. We have chosen to study fewer units but in greater depth so that the children have an opportunity to study an area in greater depth and for their learning to become embedded. We encourage the children to understand that the process is of equal, if not greater, importance than the product. Children are given many opportunities to investigate, explore, create, and evaluate as well as building their resilience as they experience success in overcoming problems in the design process.

EYFS

In the new Early Years Foundation Stage framework, design and technology falls within the "specific area" of the expressive arts and design. The development of children's artistic and cultural awareness supports their imagination and creativity. It is important that children have regular opportunities to engage with the arts, enabling them to explore and play with a wide range of media and materials. The quality of what children see, hear, and participate in is crucial for developing their understanding, self-expression, vocabulary, and ability to communicate through the arts. The frequency, repetition and depth of their experiences are fundamental to their progress in interpreting and appreciating what they hear, respond to, and observe. The expressive arts and design curriculum is divided into two areas:

- Creating with Materials
- Being Imaginative and Expressive

The Early Learning Goals for creating with materials state that children working at the expected level of development will:

- safely use and explore a variety of materials, tools, and techniques, experimenting with colour, design, texture, form, and function.
- share their creations, explaining the process they have used.
- make use of props and materials when role playing characters in narratives and stories.

Key Stage 1

Through a variety of creative and practical activities, pupils are taught to design and make in a range of relevant contexts e.g., home, school, gardens and playgrounds, the local community, industry, and the wider environment.

Design - Pupils are taught to design purposeful, functional, appealing products for themselves and other users, based on design criteria. Pupils are taught to generate, develop, model, and communicate their ideas through talking, drawing, templates, mock-ups and when appropriate information and communication technology.

Make – Pupils are taught to select from and use a range of tools and equipment to perform practical tasks e.g., cutting, shaping, joining, and finishing. Pupils are taught to select from and use a wide range of materials and components including construction materials, textiles, and ingredients, according to their characteristics.

Evaluate – Pupils are taught to explore and evaluate a range of existing products and to evaluate their ideas and products against design criteria.

Technical Knowledge – Pupils are taught to build structures, exploring how to make them stronger, stiffer, and more stable. Pupils are taught to explore and use mechanisms e.g., levers, sliders, axles, wheels in their products.

Cooking and Nutrition – Pupils are taught to use the basic principles of a healthy and varied diet to prepare dishes and to understand where food comes from.

Key Stage 2

Through a variety of creative and practical activities, pupils are taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making in a range of relevant contexts e.g., home, school, leisure, culture, enterprise, industry, and the wider environment.

Design – Pupils are taught to use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose and aimed at particular individuals or groups. They are taught to generate, develop, model, and communicate their ideas through discussion, annotated sketches, cross-sectional and exploded diagrams, prototypes, pattern pieces and computer aided design.

Make – Pupils are taught to select from and use a wider range of tools and equipment to perform practical tasks accurately e.g., cutting, joining, shaping, or finishing. They are taught to select from and use a wider range of materials and components, including construction materials, textiles, and ingredients according to their functional properties and aesthetic qualities.

Evaluate – Pupils are taught to investigate and analyse a range of existing products and to evaluate their ideas and products against their own design criteria and consider the views of others to improve their work. They are also taught to understand how key events and individuals in design and technology have helped to shape the world

Technical Knowledge – Pupils are taught to apply their understanding of how to strengthen, stiffen and reinforce more complex structures. They are taught to understand and use mechanical systems in their products e.g., gears, pulleys, cams, levers, and linkages. They are taught to understand and use electrical systems in their products e.g., series circuits incorporating switches, bulbs, buzzers, and motors. They are taught to apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition – As part of their work with food, pupils are taught how to apply the principles of nutrition and a healthy varied diet. They are taught to prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques. They are taught to understand seasonality and know where and how a variety of ingredients are grown, reared, caught, and processed.

Impact

At Castlefields school, we have a challenging and exciting design and technology curriculum delivered by enthusiastic and knowledgeable staff. Our successful approach to design and technology at Castlefields school results in pupils developing the creative, technical, and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world. They children also understand the need to eat healthily and how to cook some basic foods. In combining designing and making skills with their knowledge, understanding and experience, the children at Castlefields learn to design and create quality products as well as developing skills and attributes which they will use beyond school and into adulthood.

Monitoring of design and technology is through:

- Learning walks conducted by both the design and technology subject leader and headteacher, with feedback given to members of staff.
- Project trawls and photographs of design and technology projects undertaken in different classes.
- An online folder of examples of children's work is kept in the design and technology folder in the staff library on the school server, for all staff to add work to, or to look at examples of outcomes in design and technology.
- Discussions with children about their thoughts, ideas, experiences, and evaluation of their work in design and technology at Castlefields school.
- The subject leader checking the long-term and medium-term planning uploaded by all members of staff and regular checks to ensure that the teaching and learning still fits with the planned learning.