

Stradbroke CE Primary School

Design and Technology Curriculum Statement



Aims and objectives

Design and Technology is an inspiring, rigorous and practical subject. Design and Technology encourages children to learn to think creatively to solve problems both as individuals and as members of a team. We encourage children to use their creativity and imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Skills are taught progressively to ensure that children learn and practise them, in order to develop as they move through the school. We aim to, wherever possible, link work to other disciplines such as mathematics, science, engineering, computing and art. The children are also given opportunities to reflect upon and evaluate their work, its uses and its effectiveness and are encouraged to become innovators and risk-takers. 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.

When learning about cooking and nutrition, we aim to instil a love of cooking in pupils, by teaching them how to cook and apply the principles of nutrition and healthy eating.

The aims of teaching design and technology in our school have been written with reference to the aims of the National Curriculum, providing a progression and continuity of learning experiences through a considered sequence of lessons and experiences across different areas of design and technology: design, make, evaluate, technical knowledge and cooking and nutrition.

Our aims are linked to the National Curriculum:

- To enable children to develop the creative, technical and practical expertise needed to perform everyday tasks confidently and to participate successfully in an increasingly technological world
- To ensure children 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
- To enable children to critique, evaluate and test their ideas and products and the work of others
- To enable children to understand and apply the principles of nutrition and learn how to cook

Design and Technology Curriculum Planning

We use the National Curriculum to inform our design and technology planning. The objectives are mapped across the year groups and throughout the school as demonstrated in our progression document, to ensure coverage and breadth in our mixed year group classes. Teachers also use the skills progression to offer children the opportunity to develop and practise skills and acquire further knowledge as the children progress through the school, building upon prior learning.

To ensure the design and technology curriculum requirements are met, a range of sessions are delivered including lessons taught by class teachers within school and opportunities for further design and technology exploration are planned through stand-alone design and technology days delivered by design specialists, to ensure that design and technology is given high status in the curriculum. This ensures sufficient time is given to the technical and practical skills and techniques which benefit from being taught over an extended period of time.

Teaching of DT should follow the design, make and evaluate cycle. Each stage should be rooted in technical knowledge.

When designing, making and evaluating, the children are taught to:

Design

- use research and develop design criteria to inform the design of innovative, functional, appealing products that are fit for purpose, aimed at particular individuals or groups
- generate, develop, model and communicate their ideas through discussion, annotated sketches, cross-sectional diagrams, templates, mock-ups, pattern pieces and exposure to computer-aided design e.g. tinkercad and SketchUp

Make

- select from and use a wider range of tools and equipment to perform practical tasks (for example, cutting, shaping, joining and finishing) accurately
- 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

- investigate and analyse a range of existing products
- evaluate their ideas and products against their own design criteria and consider the views of others to improve their work
- understand how key events and individuals in design and technology have helped shape the world

Technical knowledge

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

When learning how to cook, the pupils are taught to:

- understand and apply the principles of a healthy and varied diet
- prepare and cook a variety of predominantly savoury dishes using a range of cooking techniques
- understand seasonality and know where and how a variety of ingredients are grown, reared, caught and processed.

Subject Content

Early Years Foundation Stage (EYFS)

The EYFS staff team plan for children to experience creative opportunities and develop their design and technology key skills and techniques within the EYFS curriculum as an integral part of the topic work covered during the year. They make links to the objectives set out in the Early Learning Goals (ELG). The ELG that link most closely to the design and technology national curriculum are:

- Expressive Arts and Design – exploring and using media and materials
- Expressive Arts and Design – being imaginative
- Physical Development – moving and handling

Design and technology skills make a significant contribution to the ELG objectives of developing a child's creative and physical development, with a focus on developing fine motor skills and learning how to plan, design and produce a finished product. In addition to regular design and technology activities, there is a creative area always available within the continuous provision to encourage children to explore and develop their creative imagination.

Reception children will be, where appropriate, included in whole school projects, workshops, events and competitions associated with design and technology.

Key Stage 1 and 2

We organise our curriculum into the key processes of design and technology: design, make, evaluate, technical knowledge and cooking and nutrition outlined in the National Curriculum. Sequences of lessons are planned allowing for the acquisition of knowledge and the development of skills and depth of understanding. Whilst design and technology will at times be related to topic work or other cross-curricular subjects, teachers also plan specific activities and sequences of lessons to provide development of the skills, knowledge and understanding of the subject.

We have plotted the progression of knowledge and skills within design and technology for KS1, LKS2 and UKS2. Key concepts, skills and vocabulary are revisited throughout the key stages to ensure that children develop a secure understanding and build upon skills learnt.

Teachers will plan for lessons so that children will learn to design purposeful, functional, appealing products for themselves and others based on design criteria and to communicate their ideas through talking and drawing. They learn to select from and use a range of tools and equipment to perform practical tasks and to choose from a wide range of materials and components. They also learn to explore and evaluate their design and product.

Teaching & Learning Style

Design and technology teaching focuses on enabling the children to express their creative imagination and develop their knowledge and skills by introducing them to an exciting, varied and relevant curriculum. Design and Technology will engage the children in a broad range of designing and making activities which involve a variety of methods of communication; speaking, designing, drawing, assembling, making, writing and using computer technology. As pupils progress through the school, they should be able to think critically and develop a more rigorous understanding of design and technology. Where possible and appropriate, links will be made to topic work or other cross-curricular subjects in order to inspire and engage children and enrich and extend the teaching of other subjects.

Work is planned to ensure a balance of materials, skills, knowledge and understanding throughout each Key Stage. Units of work are planned to include designing, making and evaluating products, supported by focused practical tasks or skills teaching. All children should have a breadth and balance of experience.

We believe in whole-class teaching methods to encourage discussion, questioning and practical learning activities. We recognise that there are children of different abilities and we provide suitable learning opportunities for all children by:

- Setting common tasks which are open-ended and can have a variety of responses or outcomes.
- Setting tasks of varying difficulty, enabling all children to work to their full potential.
- Using different resources to provide varying levels of challenge.
- Using teaching assistants to support the work of individual children or groups of children.

Cross Curricular Links and Wider Learning Opportunities

Where relevant and appropriate, meaningful links are created between design and technology and other curriculum subjects. Supporting children to make these links enriches and extends their understanding by enabling them to consider different contexts.

Wider learning opportunities are used thoughtfully in design and technology to help bring the subject to life and make learning experiences relevant. We encourage and welcome all parents and carers to support and assist with whole school events and design and technology projects. Parents and carers with specialist DT skills, and those who work in the arts, are warmly encouraged to approach the school with support and ideas for how to support and enrich the design and technology curriculum.

Personal, Social and Health Education (PSHE) and Citizenship

Design and technology hold close links with developing children's PSHE. Enabling children to creatively express themselves, develop skills and passion for a subject and take time and care to design, make and evaluate a product promotes mindfulness and wellbeing. Children are explicitly taught how to evaluate their own and other's products. Communication and interaction with others are skills that children use daily and therefore teaching them the effectiveness of these skills by being able to critique peer's work in a positive manner is crucial in terms of their social development.

Spiritual, Moral, Social and Cultural Development

When teaching design and technology, we contribute to the children's cultural development as children begin to realise through evaluation of past and present design and technology its impact on daily life and the wider world. They develop a critical understanding of how high-quality design and technology makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Equal Opportunities

Design and technology plays an important role in the life of our school and creative learning is at the heart of our teaching ethos. It is available to every child and all children take part in creative activities, making a positive contribution to the life of the school and local community. Teachers will use opportunities within design and technology to challenge stereotypes.

Whole school policy on equal opportunities will be adhered to during Design and Technology activities. We will ensure that all children are provided with the same learning opportunities whatever their social class, gender, culture, race, disability or special educational needs (SEN). As a result, we hope to enable all children to develop a positive attitude towards others. All pupils have equal access to design and technology lessons. Children with special educational needs or disabilities will be differentiated for and supported appropriately, to ensure development of skills and equal access to the design and technology curriculum. All children will be supported through differentiation, adaptation or adult support, to enable equal access to learning in design and technology. Opportunities and resources for gifted & talented children will be made available to support and challenge appropriately.

Assessment

Teachers assess children's work in design and technology by making assessments as they observe them working during lessons. They record the progress that children make by assessing the children's work against the aims of the national curriculum and learning objectives within the lesson. Teachers will use a range of tools to assess children including discussion and questioning, observations, quizzes and recaps and, where appropriate, summative assessments.

Resources

Children have access to quality resources for each project and are taught to use tools and equipment with safety and respect.

Monitoring and Review

The design and technology subject lead is responsible for monitoring the standard of children's work, the effectiveness of teaching and learning and supporting colleagues in the teaching of design and technology to ensure a high quality, broad and stimulating curriculum.

A range of good-quality design and technology materials will be maintained in school and supplemented when needed for workshops or cross-curricular projects. This will enable teachers to resource and teach effectively and maintain a meaningful and engaging design and technology curriculum.

This guidance is monitored by all teaching staff with the leadership team. It will be reviewed when changes are made to the curriculum.