

St Peter's C of E Primary School



Design and Technology Policy

Vision Statement

'Faith, Family, Future'

Jesus built his church upon the strength of St Peter – who was his rock. At St Peter's, we provide a solid foundation on which our community thrives through our rich, aspirational curriculum. As a family, we nurture and unlock individual potential through mutual love and respect; enabling all to flourish now and in the future.

'Each of you should use whatever gift you have received to serve others'

1 Peter 4 v10

Rationale

Design and technology teaches children to be creative, using their imagination to design and make products. At St Peter's, we believe children learn best when they are inspired by a real purpose so plan design and technology projects that solve real and relevant problems covering a variety of contexts. Children learn to consider their own and others' needs, wants and values. Design and technology allows children to acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. It enhances learning by preparing children to participate in tomorrow's rapidly changing technologies. Children learn to work independently and as members of a team, to become resourceful, innovative and enterprising. Through the evaluation of past and present design and technology, they develop a critical understanding of its impact on daily life and the wider world. We recognise that making mistakes is an integral part of the learning process in design and technology, allowing children to make adjustments and improvements whilst building their growth mind-set.

Aims and Objectives for the Teaching of Design and Technology at St. Peter's CEP School

The National Curriculum aims for Design and Technology are to:

- 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

At St Peter's we aim for our Design and Technology curriculum to:

- teach specific technical knowledge, designing and making skills through practical creative projects in a progressive framework building on previous experience
- allow children to solve relevant, real life problems with open-ended outcomes
- encourage creative risk-taking – giving the opportunity for children to try things out, learn from their mistakes, be resourceful in trying to solve problems and to innovate, using imagination and creativity
- provide opportunities to design and make real -life products for a range of users
- provide the opportunity for children to evaluate past and present products
- teach children about nutrition and how to cook, through a carefully planned progression of cooking skills
- build resilience and growth mind-set

Teaching and Learning

Whole-class teaching methods combine the development of design, practical skills and the ability to evaluate their own and others' designs. Children follow the design process allowing them to learn from others, design for a purpose, create and then to evaluate and make improvements on their products. Resilience and growth mind-set is key, where children learn from mistakes and build on past-experiences.

Expressive arts and design is one of the specific areas of the Early Years Foundation Stage and develops each child's imagination, creativity and their ability to use media, materials and design technology. Children have the opportunity to do this in a range of ways both through child-initiated and adult-led activities allowing them to play with colours, textures and design.

In Key Stage 1, children learn through a variety of creative and practical activities; gaining the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

They learn to:

- design purposeful, functional, appealing products for themselves and other users based on design criteria
- generate, develop, model and communicate their ideas through talking, drawing, templates, mock-ups and, where appropriate, information and communication technology
- select from and use a range of tools and equipment to perform practical tasks
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics
- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria
- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms in their products
- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from

In Key Stage 2, children learn through a variety of creative and practical activities; gaining the knowledge, understanding and skills needed to engage in an iterative process of designing and making.

They learn to:

- 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 and exploded diagrams, prototypes, pattern pieces and computer-aided design
- select from and use a wider range of tools and equipment to perform practical tasks 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
- 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
- apply their understanding of how to strengthen, stiffen and reinforce more complex structures
- understand and use mechanical systems in their products
- use electrical systems in their products
- apply their understanding of computing to program, monitor and control their products
- 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

Planning and Organisation

At St Peter's CEP School, we follow the Kapow Scheme of work for Design and Technology. Teachers use this scheme to plan specific activities and open-ended learning opportunities, providing children opportunities to develop skills and foster a positive attitude to learning. Clear achievement goals are set in the planning, that reflect the knowledge and skills children need to progress. The scheme, and teachers' use of it, ensures that the work and expectations match pupils' abilities, experience and interests; demonstrating clear progression, continuity and subject coverage throughout the school. Careful long-term planning ensures breadth and balance; ensuring that the units of work are varied and provide a range of foci as children move progress through each year group. Due to the mixed year groups, we run a two-year planning cycle of design and technology topics in Key Stage 2 to ensure coverage.

Assessment

In design and technology, formative assessment is essential for the progression of skills and knowledge; design, make, evaluate, technical knowledge, cooking and nutrition. Assessment opportunities are integrated into the learning experiences and inform the teacher's future planning. Children are encouraged to improve their own learning performance, allowing them to evaluate their own work in order to understand what they need to do to make improvements. Children's learning is documented in books as well as through the Seesaw app. At the end of each topic a summative assessment activity is carried out in the form of a quiz through which the children can show what they have remembered and learned, these results are recorded using the Kapow scheme's assessment documents.

Risk Assessments

Risk assessments are carried out and potential dangers highlighted to children. There are many possible hazards involved in teaching design and technology such as cutting and sawing tools, sharp items such as pins and needles and cookers. Parental consent is obtained for food tasting with teachers made aware of children with food allergies.

SEN/Able/EAL Pupils

We recognise that there are children of widely differing abilities in all classes and we ensure access to learning for all children by scaffolding their learning as needed. We recognise that within a subject like Design and Technology children who sometimes struggle with written work, or those who have known SEN, may excel and show creative talents; and so the identification of which children require extra support or scaffold tasks is done within each topic by the teacher. Any child may need extra support to understand a concept or to master a new skill and so scaffolding is available to any who may require it.

In order to ensure inclusion and engagement across all ability levels, tasks are often open-ended, facilitating a range of outcomes and results; tasks are pitched to build on children's existing knowledge and understanding and, when necessary, pupils are paired or grouped sensitively.

For children who have English as an additional language, teachers provide word-bank resources or pre-teaching to support the understanding of subject specific vocabulary.

Retrieval Practice

Children revisit previous learning as they move through the school. Low stakes quizzes on Kahoot! are created at the end of topics which can be used for future retrieval practice. Memory Maps of learning are created using working walls, key learning and vocabulary in order for children to revisit their learning as they move through the year groups. Both quizzes and Memory Maps are created for each year group and move through the school alongside them.

Monitoring and Review

- The Design and Technology leader, as well as the curriculum leader, is available to support teachers with their planning and teaching of design and technology.
- Planning, teaching and learning is monitored through observations of lessons, review of books and Seesaw evidence and through pupil interviews.

Reviewed December 2022