



Sacred Heart Catholic Primary School

Design and Technology

Programme of Study



At Sacred Heart

We are developing a rigorous approach to Design and Technology. We have the Projects on a Page schemes of work from the Design and Technology Association available for staff on the school network.

Design and Technology is taught in 6 week blocks every other half-term. Projects are, where possible, linked to current topics which provides purpose and enrichment.

We have workbooks where pupils record the stages of their work as they progress through a project. In KS1 work may be carried out in will be responsible for recording their own ideas and work.

We consider annually the provision of a Design and Technology week and two 6 week projects yearly.

Aims and Principles

Aims

Our Design and Technology curriculum closely follows the aims of the National Curriculum to ensure that all pupils:

- 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

Principles

We believe that Design and Technology is vital **educationally, emotionally** and **culturally**. It is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. 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. High-quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

Risk taking is encouraged and leads to high achievement and originality amongst pupils. Opportunities to take part in the creative process and explore imaginatively are essential to wellbeing in all of us.

Logic will take you from A to B. Imagination will take you everywhere
Albert Einstein

Attainment

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study **Subject Content**

Early Years Foundation Stage

In Early Years, the children develop essential basic skills in design and technology which prepares them for their transition into Year 1. This is by the teacher creating many opportunities for the children to carry out D&T related activities across all areas of learning. By the end of Early Years, it is expected that the children will be able to:

- Construct with a purpose in mind.
- Use simple tools and techniques competently and appropriately.
- Build and construct with a wide range of objects, selecting appropriate resources and adapting their work when necessary.
- Select the tools and techniques they need to shape, assemble and join materials they are using.

In the Early Years, pupils will have access to construction areas and resources in the inside and outside environment. These include an appropriate range of materials, for example, junk modelling, lego, small and large scale wooden blocks, and loose parts. Also, a range of implements will be ready and available for all pupils to use in the Early Years. For example, pens, pencils, paper for children to record their designs on. Pupils will learn to safely use and explore a variety of materials, tools and techniques, experimenting with design, texture, form and function. They will be encouraged to use what they learn about media and materials in original ways, thinking about uses and purposes. They will be supported in learning joining techniques and develop the language necessary to talk about their design, make it and evaluate it. A range of pictures and books showing a variety of styles and ways of construction, including different cultural contexts, will also be available, shared and taught to pupils.

Key stage 1

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment]. When designing and making, pupils should be taught to:

Design

- 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

Make

- select from and use a range of tools and equipment to perform practical tasks [for example, cutting, shaping, joining and finishing]
- select from and use a wide range of materials and components, including construction materials, textiles and ingredients, according to their characteristics

Evaluate

- explore and evaluate a range of existing products
- evaluate their ideas and products against design criteria

Technical knowledge

- build structures, exploring how they can be made stronger, stiffer and more stable
- explore and use mechanisms [for example, levers, sliders, wheels and axles], in their products.

Cooking and nutrition

As part of their work with food, pupils should be taught how to cook and apply the principles of nutrition and healthy eating. Instilling a love of cooking in pupils will also open a door to one of the great expressions of human creativity. Learning how to cook is a crucial life skill that enables pupils to feed themselves and others affordably and well, now and in later life.

Pupils should be taught to:

- use the basic principles of a healthy and varied diet to prepare dishes
- understand where food comes from

Key Stage 2

Through a variety of creative and practical activities, pupils should be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making. They should work in a range of relevant contexts [for example, the home, school, leisure, culture, enterprise, industry and the wider environment].

When designing and making, pupils should be 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 and exploded diagrams, prototypes, pattern pieces and computer-aided design

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 [for example, gears, pulleys, cams, levers and linkages]
- understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors]
- apply their understanding of computing to program, monitor and control their products.

Cooking and Nutrition

Pupils should be 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

Assessment

Assessment is viewed as part of the teaching and learning process and is the teacher's responsibility to assess and monitor the individual progress and development of pupils. Assessments take place throughout the year and teachers record the progress and attainment against the National Curriculum expectations of attainment. Teachers use this information to inform future lessons. Final end of year assessments are made, identifying the level in which the child is working. The Design and Technology subject leader keeps

evidence of the children's work in a portfolio. This demonstrates the expected level of achievement in Design and Technology in each year of the school.

Children in Foundation Stage are assessed within Expressive Arts and Design and their progress is tracked termly. Levels are reported to parents at the end of the Reception year.

Monitoring and Evaluation

The subject leader will monitor and evaluate art throughout the school in a variety of ways; including checking planning, lesson observations, work scrutiny, pupil and staff questionnaires and/or 1:1 meetings to ensure coverage of the curriculum and quality of teaching and learning is provided. The subject leader will also support fellow colleagues in the planning, teaching and CPD of art and design