

# St Peter's Catholic Primary School



## Design Technology Policy

## **Aims and Objectives**

Design and technology is essentially a practical subject that allows children to think imaginatively and creatively and to become more autonomous and effective problem solvers, both as individuals and as part of a team. Our aim is to provide children with a rich and enjoyable experience of design and technology, in which they can acquire and develop their own designing and making skills

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.

## **Curriculum**

### **Early Years Foundation Stage**

We encourage the development of skills, knowledge and understanding that help Pre-school, Foundation 1 and Foundation 2 children make sense of their world. We relate this development to the objectives set out in the 'Statutory framework for the early years foundation stage' which underpins the curriculum planning for children aged from birth to five. This learning forms the foundations for later work in design and technology. These early experiences include asking questions about how things work, investigating and using a variety of construction kits, materials, tools and products, developing making skills and handling appropriate tools and construction materials safely and with increasing control. Throughout the Foundation Stage, activities and opportunities are planned where children can learn through talk, play and their own life experiences. Children in the Foundation Stage will experience a variety of activities including:

- Choosing and exploring a variety of materials such as fabric, card, paper, wood, boxes etc.
- Learning how to use scissors safely and correctly,
- Exploring a variety of joining techniques such as PVA glue, Pritt stick, masking tape, elastic bands, sellotape, treasury tags, split pins, paper clips and string to join materials together,
- Taking part in both cooking and non-cook food activities, learning about the importance of food hygiene,
- Having opportunities to explore creating models using a wide range of construction kits that fit together in a variety of different ways,
- Having opportunities to talk about and explain how they will/have made their model and to discuss what they like/dislike about it,
- Folding and shaping paper in order to create a range of structures.

### **Key stage 1:**

Through a variety of creative and practical activities, pupils will 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.

## **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**

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

In Key Stage 1, children will be taught to:

- ✓ Use the basic principles of a healthy and varied diet to prepare dishes;
- ✓ Understand where food comes from.

In Key Stage 2, children will 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.

## **Teaching and Learning Style**

Through a flexible curriculum, the school uses a variety of teaching and learning styles in design and technology lessons. The principal aim is to develop children's knowledge, skills and understanding in the subject. Teachers ensure that children apply their knowledge and understanding when developing ideas, during planning and making products and when evaluating them. This is done through a mixture of whole-class teaching and individual or group activities. Within lessons, children are given the opportunity both to work on their own and to collaborate with others, listening to other children's ideas and treating these with respect. Children critically evaluate existing products, their own work and that of others. They have the opportunity to use a wide range of materials and resources, including squared paper and ICT. In all classes there are children of differing ability. This fact is recognised and suitable learning opportunities are provided for all children by matching the challenge of the task to the ability of the child.

## **Time allocation**

On average approximately one and a half hours per week is allocated to Design and Technology in Key Stage 1 and Key Stage 2. Within this, it is expected that all relevant attainment targets and Programmes of Study are covered at the end of each Key Stage. D&T will be taught in each term over the three terms.

## **Creative arts book**

All pupils will be given a creative arts book when they start in Ks1 and this will follow children on their DT journey throughout school until they reach year 6. Pupils are encouraged to use their creative arts book for

- Study of key events and individuals in design and technology have helped shape the world
- Photographs
- Pictures from magazines
- printed information from computer aided research
- Samples of materials or colour
- Evaluations by pupils of their own work and the work of others

## **Planning**

Design and technology is a foundation subject in the National Curriculum and our planning is cross-curricular and linked to the specific curriculum of our school. We might use the local environment or a current theme or topic as the basis for the required skills which are taught as part of the flexible curriculum.

Design and Technology in our Early Years Foundation stage is planned through topics covering understanding the world and expressive arts and design. EYFS teachers produce a yearly planner which encompasses understanding of the world and expressive starts and design, curriculum maps and weekly plans which cover these topics, outcomes and Early Learning goals.

Our school creates a school yearly planner for KS1 and KS2 which encompasses Design and Technology, a Design and Technology curriculum map, medium-term knowledge organisers for each Art Topic and short-term plans for the delivery of the art curriculum. Through this planning we ensure skill progression that the children are increasingly challenged. Children of all abilities are given the opportunity to develop their skills, knowledge and understanding.

## **Cross-Curricular Links**

**Literacy** - Design and Technology contributes to the teaching of Literacy by providing valuable opportunities to reinforce prior learning. Discussion, drama and role-play are important ways for the children to develop an understanding that people have different views about design and technology. The evaluation of products requires children to articulate their ideas and to compare and contrast their views with those of other people. Through discussion, children learn to justify their own views and clarify their design ideas.

**Numeracy** – In design and technology, children learn to measure and use equipment correctly, generate nets of shapes in order to create packaging and weigh and measure accurately. They will also learn about size and shape and make “real” use of their mathematical knowledge in order to be creative and practical in their designs and modelling.

**Science** – Science helps in design and technology, looking at and drawing electrical circuits. It also helps children to think about using materials to create structures which can withstand a force.

**ICT** - Information and Communication Technology (ICT) enhances the teaching of design and technology, wherever appropriate, in all key stages. Children may use software to enhance their skills in designing and making things. Younger children are able to use simple software to enhance their learning. Older children use an ICT control program to control mechanisms and to get them to move in different ways. The children also use ICT to collect information and to present their designs through a range of design and presentation software.

**Personal, Social and Emotional Education (PSHE)** – Design and technology contributes to the teaching of PSHE, encouraging children to develop a sense of responsibility in following safe procedures when making things. They also learn about health and healthy diets. Their work encourages them to set targets and meet deadlines. They will also learn how to prevent disease from spreading and about personal hygiene when working with food.

### **Health and Safety**

In this subject the general teaching requirement for health and safety applies. We teach children how to follow proper procedures for food safety and hygiene. It is the responsibility of the subject leader to pass on any relevant Health and Safety information to staff. It is the individual member of staff's responsibility to ensure that they have read, understood and act on this information. Please see updated Risk Assessment for DT.

### **Assessment**

Pupils will be assessed, and their progression recorded, in line with St Peters Assessment policy. 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.

Pupils aged between two and five will be assessed in accordance with the 'Statutory framework for the early years foundation stage', in order to identify a pupil's strengths and identify areas where progress is less than expected. An EYFS profile will be completed for each pupil in the final term of the year in which they reach age five. The progress and development of pupils within the EYFS is assessed against the early learning goals outlined in the 'Statutory framework for the early years foundation stage'.

The progress and development of pupils within KS1 and KS2 is assessed against the descriptors outlined in the national curriculum. Pupils in KS1 and KS2 are expected to show their progression in their sketchbooks. Throughout the year, teachers will plan on-going creative assessment opportunities in order to gauge whether pupils have achieved the key learning objectives. This demonstrates the expected level of achievement in design and technology in each year of the school.

### **Resources**

The school has a selection of centrally stored materials, tools and equipment to ensure that all pupils have access to the necessary resources. The Design Technology budget covers the cost of materials and replacement tools. Class teachers are required to maintain the tools and equipment in their classrooms. Pupils may occasionally be asked to bring materials from home if they can; however, to provide all pupils with the same opportunities, the school will provide for pupils who are unable to do this. Display walls are utilised and updated on a termly basis, in accordance with the area of DT being taught at the time. At the start of each school year, teachers may request resources and the subject leader will work with the headteacher to assess the school's tools, materials and equipment to ensure there is sufficient equipment for pupils, allowing for funds to be allocated where necessary. Any other small item requests throughout the year should be ordered in line with our school order form requesting service, via the school office.