St Mary's Catholic Primary School

Design and Technology Policy

We grow and learn in the footsteps of Jesus

Approved by	
Name:	***Nicola Pettitt***
Position:	***Chair of Governors***
Signed:	*N.Pettitt*
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Design and Technology Policy

INTENT

Aims and objectives
At St Mary's we intend that our Design and Technology curriculum will prepare children to take part in the development of the rapidly developing world. The subject encourages our children to become autonomous creative problem-solvers, both as individuals and as part of a team. It enables our children to become discriminating and informed consumers and potential innovators who have the ability to make use of design and technology effectively to develop their ideas, make products and systems.

At St Mary's, we have utilised the 'Kapow' scheme of work, which we have adapted to suit our children and their needs. We use our well sequenced and progressive curriculum map containing the key concepts children need to be procedurally fluent in to work and think like professionals.
While there are opportunities for children of all abilities to develop their skills and knowledge in each teaching unit, the progression planned into the scheme of work means that the children have the opportunity to build on and apply prior knowledge as they move through the school.

The key concepts in design and technology we plan a progression for are as follows:

- Developing, planning and communicating ideas
- Working with tools, equipment, materials and components to make quality products
- Evaluating processes and products
- Mechanisms
- Construction and use of materials
- Textiles

We aim to ensure that 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.

At our school, we teach Design and Technology to all children, whatever their ability and individual needs. This accords with the school's curriculum policy of providing a broad and balanced education to all children. Through our Design and Technology teaching, we aim to provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of all pupils and we take reasonable steps to achieve this.

IMPLEMENTATION

At St Mary's School we follow the 'Design, Make, Evaluate' approach to the teaching of Design and Technology, as outlined in the National Curriculum Programmes of Study document. This is a subject that requires the teacher to be directly involved with the children in the lesson to set the task, impart knowledge, lead activities, monitor and develop the children's progress and encourage development. We encourage children to participate in a variety of design and technology tasks through which we aim to build up the confidence of all children. Part of our teaching focuses on developing the children's ability explore their own ideas to produce creative work. Children are taught to analyse and give their own opinions on a variety of ready-made products that are already on the market, using key language and vocabulary. This should enable the children to think more critically and show a deepened understanding of the subject.

Lessons incorporate a range of teaching strategies from independent tasks, paired and group work including practical hands-on, computer based and inventive tasks. The technical skills which we teach encompass the following areas: Cooking and Nutrition, Mechanisms, Textiles, Electrical Systems, Structures, and the Digital World. We feel that the teaching of Food and Nutrition is a great importance and holds great relevance in current times. For this reason, children will study a Food and Nutrition unit every year. Additionally, a Structures unit will be covered, along with either a Mechanisms or Textiles unit (as outlined in the Whole School Overview document). This ensures that the technical skills are covered with greater depth, and that – by the end of each key stage – children will have reached the expectations of the National Curriculum.

We carry out the curriculum planning in design and technology in three phases. The long-term plan maps the topics studied in each term during the key stage. The subject leader devises this plan adapting and utilising the 'Kapow!' scheme of work where necessary.

The medium-term plans, which have been produced provide details of each unit of work for each term. Design and Technology lesson plans list the specific learning objectives and expected outcomes for each lesson; the class teacher is responsible for keeping track of these individual plans and the class teacher and subject leader to meet termly to discuss how the unit of work went.

Foundation Stage

In our Foundation stage, we relate the creative development of the children to the objectives set out in the early learning goals, which underpin the curriculum planning for Development matters. The children's learning includes art, music, dance, role-play and imaginative play. The range of experience encourages children to make connections between one area of learning and another and so extends their understanding. We provide a rich environment in which we

encourage and value creativity. Children experience a wide range of activities that they respond to, using the various senses. The activities that they take part in are imaginative and enjoyable.

Within the foundation stage we run continuous provision, where children have free access to all resources and opportunities, allowing them to practise their knowledge, skills and understanding at their own pace and interest. We relate the creative development of the children to the points set out in the foundation stage profile, as well as the age-related expectations in development matters.

Key Stage One

During Key stage 1, design and technology is about developing children's creative and practical skills where they will be taught the knowledge, understanding and skills they need to engage in a process of designing and making.

By the end of Key Stage One after designing and making, pupils should have the ability 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

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

Key Stage Two

During Key stage 2, design and technology is about giving the children the opportunities to engage in a variety of creative and practical activities by building on their knowledge, skills and understanding of materials and processes through providing more complex activities. Children's

experiences help them to develop their understanding of the diverse roles and functions of design and technology in the locality and in the wider world.

By the end of Key Stage Two after designing and making, pupils should have the ability 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

- 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.

IMPACT

Children will demonstrate their ability in Design and Technology in a variety of different ways. Younger children might, for example, use new materials in exploration during continuous provision, whilst older children may produce their own products after carefully selecting their own resources based on their understanding of the qualities and aesthetics of each resource.

Throughout a unit of work, teachers assess pupil's progress using national curriculum standards. Teacher's mark who have met/not met the objective for each strand of the curriculum after the relevant lesson. We use this as a basis of assessing the progress of the child and we pass this information on to the next teacher at the end of the year. Teachers will make a judgement at the end of each Design and Technology unit of work on whether pupils are working below, just below, on track to achieve expected standard.

The Design and Technology subject leader will keep samples of children's work after the completion of each unit of work in a portfolio. These will demonstrate what the expected level of achievement is in Design and Technology for each age group in the school.

Monitoring and review

The coordination and planning of the Design and Technology curriculum are the responsibility of the subject leader, who also:

- Supports colleagues in their teaching, by keeping informed about current developments in Design and Technology and by providing a strategic lead and direction for the subject;
- Gives the Governors and head teacher an annual summary report in which she evaluates the strengths and weaknesses in the subject and indicates further areas of improvement.
- Uses specially allocated regular management time to review evidence of the children's work, and to observe Design and Technology lessons across the school.

This policy will be reviewed at least every two years.

Signed: *H.Murphy*
Date: 08.12.2023