St Monica's RC Primary School

Design and Technology Policy 2021

Mission Statement

Here at St Monica's we recognise that we are all cherished members of God's Family. We love and care for one another and trust God to guide us in all we do and say. By learning together we aim to achieve and working together we will succeed.

Curriculum Intent

Our intention is to provide an inspiring and practical Design and Technology curriculum that encourages children to use their imagination and creativity to design, make and evaluate their own products. These products will solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. Children will learn to think and intervene creatively to solve problems both as individuals and as members of a team.

Aims

Design and Technology teaching at St Monica's should provide opportunities to:

- To build and apply a repertoire of knowledge, understanding and skills in order to design and make products
- To critique, evaluate and test ideas and products and the work of others
- To become creative problem solvers as individuals and members of a team.
- To develop an understanding of technological processes, products, and their manufacture, and their contribution to our society.
- To foster enjoyment, satisfaction and purpose in designing and making.

- To provide children with the opportunity to explore food and cooking techniques along with healthy eating and environmental issues within food production.

Curriculum Implementation

The teaching and implementation of our Design and Technology curriculum is based upon the knowledge and skills stated in the National Curriculum and the EYFS Framework. Design and Technology is taught in every year group as part of their termly topics. Children are given the opportunity to work both independently and collaboratively during their lessons in order to develop the key skills and knowledge needed to solve problems, create products and evaluate effectively.

EYFS

Design and Technology plays an important part in a child's early development. Children in the Foundation Stage are taught Design and Technology through the Early Learning Goals –'Exploring Media and Materials' and 'Understanding the World'. Children are encouraged to safely use and explore a variety of materials, tools and techniques, experiment with colour, design, texture, form and function. All children in EYFS are given the opportunity to ask questions about how things work, investigate and use a variety of construction kits, materials, tools and products and they are taught how to handle appropriate tools and construction materials safely.

Key Stage 1 and 2

Teachers in KS1 and KS2 use Cornerstones to plan exciting and structured Design and Technology lessons based on their termly topic. This is covered in a 2 year cycle.

Key Stage 1

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

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:

Key stage 1

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

Key stage 2

- 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.

Differentiation

In all classes there are children of differing ability. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies: appropriate questioning, differentiated tasks, grouping, and use of resources including support staff.

Special Educational Needs

We provide learning opportunities that are matched to the needs of children with learning difficulties. Where appropriate, our work in Design and Technology takes into account the targets set in the children's Individual Education Plans.

Gifted and Talented

Children who are considered to be 'gifted and talented' are challenged to extend their learning. These children have the opportunity to explore and extend their skills and techniques further.

Equal Opportunities

We are an inclusive school that ensures all children are provided with equal learning opportunities, regardless of social class, gender, culture, race, disability or learning difficulties.

Resources

Key Stage 1 resources are located in storage boxes on shelving at the back of the building's entrance hall.

Key Stage 2 resources are located in the hall and stock room.

Computing

Children have the opportunity to use a wide range of materials and resources, including ICT. ICT is used to support Design and Technology where appropriate. We also have access to two 3D printers located in the ICT suite which can be used to support Design and Technology work.

Curriculum Impact

Through our Design and Technology curriculum, children will develop the creative, technical and practical expertise to perform everyday tasks confidently and to participate successfully in an increasingly technological world. They will ultimately know more, remember more and understand more about Design and Technology, demonstrating this knowledge when using tools or skills in other areas of the curriculum and in opportunities out of school. Children become resourceful, innovative risk-takers, gaining skills which will support them throughout their lives.

Assessment, Record Keeping and Reporting

Design and Technology is assessed in a variety of ways including observations of the children, discussions with children about their task, questioning and viewing work and evaluations. Children share their products with their peers and are given the opportunity for self and peer evaluation and reflection. Teachers will enter their formal assessments on to the whole school tracking system, OTrack. An annual report to parents/carers details progress and achievements made in Design and Technology.

Safety

It is of paramount importance that teachers evaluate each project for elements of risk, such as when using heat, electricity or sharp tools, and that the children are familiar with basic safety procedures, this includes food safety and hygiene.

Monitoring and Review

The implementation of this policy will be monitored in line with the school's Monitoring and Evaluating the Curriculum Policy and the policy will be reviewed by the staff. The Design and Technology subject coordinator will constantly review the curriculum through Pupil Voice, learning walks, lesson observations and discussions with staff.