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St Gerard’s Catholic Primary and Nursery School



**Design & Technology Policy**

**Autumn 2016**

**SAFEGUARDING STATEMENT**

***“St Gerard’s Catholic Primary and Nursery School is committed to safeguarding and promoting the welfare of children***

***and young people and expects all staff and volunteers to share this commitment”.***

***Safeguarding incidents could happen anywhere and staff should be alert to possible concerns being raised in this school.***

**Design & Technology Policy 2016 – 17**

**“ Tell me and I forget- show me and I may remember- let me do it, and I learn.” Learning**

**through making works!”**

**(Prue Leith, Leith’s School of Food and Wine**

**As quoted in National Curriculum Document 2001, page 14)**

**Policy Date: October 2016**

**Policy Status: Statutory**

**Policy Review Cycle: Annual**

**Next Review Date: October 2017**

The Subject Leadership role of Design& Technology at St Gerard’s is central to improving outcomes for our children. Subject Leaders at St. Gerard’s have high expectations of themselves and our children, and are passionate about their specialisms. The lead for Design &Technology shall ensure that the children thoroughly enjoy and safely partake in multiple experiences of design and technology. The Role of the Design and Technology Subject lead is to:

* lead the development of design and technology in school
* provide guidance to individual members of staff
* keep up to date with local and national developments in design and technology and
* disseminate relevant information
* review and monitor the success and progress of the planned units of work
* order stock linked to the planned units of work at the end of each term
* be responsible for the organisation and maintenance of design and technology
* resources
* co-ordinate any display of design and technology work

**“Design is a funny word. Some people think design means how it looks. But of course, if you dig deeper, it’s really how it works.” Steve Jobs**

**Responsible to:**

**Governors Head Teacher, Senior Assistant Head**

**Introduction:**

Technology is the process of designing, making and evaluation products fit for a purpose or improving, refining and extending the use of existing products. It involves the creative application of the principles of science to solve practical problems. Design and Technology is a subject where children’s capability in designing and making is developed through combining their designing and making skills with knowledge and understanding. At St Gerard’s Catholic Primary & Nusery we view Design and Technology as a subject which allows children to apply their knowledge and understanding in a creative way to design and make products.

Although direct reference to British Values is not continuously made, the policy has been written with full awareness of our responsibility and commitment to this purpose.

**The aims of design & technology are:**

* + 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.

**Teaching and learning**

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 design and technology. Teachers ensure that the children apply their knowledge and understanding when developing ideas, planning and making products and then evaluating them. We do this through a mixture of whole-class teaching and individual/group activities. Within lessons, we give children 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 ICT.

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:

* setting common tasks that are open-ended and can have a variety of results;
* setting tasks of increasing difficulty where not all children complete all tasks;
* providing a range of challenges through the provision of different resources;
* using additional adults to support the work of individual children or small groups.

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**Design and technology curriculum planning**

**Design and technology is a foundation subject in the National Curriculum.**

We carry out the curriculum planning in design and technology in three phases: long-term, medium-term and short-term. The long-term plan maps out the units covered in each term during the key stages. The medium term plan outlines the details of the skills due to be taught. The short term plan fits into the foundation weekly planning outlining the objective to be covered and the way the skills will be taught.

In some cases design and technology projects will be taught to cover the skills outlined in the medium and long term planning. The subject lead will have access to all planning when required.

We plan the activities in design and technology so that they build upon the prior learning of the children. We give children of all abilities the opportunity to develop their skills, knowledge and understanding and we also build planned progression into the scheme of work, so that the children are increasingly challenged as they move through the school.

**The Foundation Stage**

We encourage the development of skills, knowledge and understanding that help reception children make sense of their world as an integral part of the school’s work. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the development of the children’s knowledge and understanding of the world to the objectives set out in the Early Learning Goals. These underpin the curriculum planning for children aged three 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 material safely and with increasing control.

We provide a range of experiences that encourage exploration, observation, problem solving, critical thinking and discussion. These activities, indoors and outdoors, attract the children’s interest and curiosity. Children in the Foundation Year will undertake investigative and skills based tasks during independent working time. The Design and Technology area will be available to them on a daily basis and they will be encouraged to undertake focused practical tasks through directed and self initiated stimuli. They will be provided with resources based on topics within the focus of the classroom and will be encouraged to design and develop ideas independently. Children in the Foundation Stage work on a range of creative themes and tasks, and their work in Creative Development links closely to other areas of the Foundation Stage Profile, especially Physical Development.

**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.

Key Stage 1 children will undertake one unit of work per term, at least. They will also have

opportunities during Design and Technology lessons to develop their own ideas and generate designs independently. Progression of Design and Technology skills will be monitored by staff formally and informally with references to expectations from the

National Curriculum.Planning will follow Medium term planning linked to National Curriculum guidelines in atwo-year cycle to ensure balance and progression.

**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, 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:**

**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.

**Organisation**

Children will be taught by Foundation Stage staff or Key Stage 1 and 2 staff. External

specialists will be used when possible. Students in school will be encouraged to consider

the benefits and learning opportunities possible through Design and Technology.

**Contribution of design and technology to teaching in other curriculum areas**

**English**

Design and technology contributes to the teaching of English in our school by providing valuable opportunities to reinforce what the children have been doing during their English lessons. 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. They are able to apply their learning in English for the structure, layout and criteria required within non fiction writing.

**Mathematics**

In design and technology there are many opportunities for children to apply their mathematical skills through choosing and using appropriate ways of calculating measurements and distances. They learn how to check their results of calculations for reasonableness and learn how to use an appropriate degree of accuracy for different contexts. Children learn to measure and use equipment correctly. They apply their knowledge of fractions and percentages to describe qualities and calculate proportions. The children will carry out investigations and in doing so; they will learn to read and interpret scales, collect and present data and draw their own conclusions. They will learn about size and shape and make practical use of their mathematical knowledge in order to be creative and practical in their designs and modelling.

**Computing**

We use ICT to support design and technology teaching when appropriate. Children use software to enhance their skills in designing and making, and use draw-and-paint programs to model ideas and make repeating patterns. The children also use ICT to collect information and to present their designs through draw-and-paint programs.

**Personal, social and health education (PSHE) and citizenship**

Design and technology contributes to the teaching of personal, social and health education and citizenship. We encourage the 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 be responsible and to set targets to meet deadlines, and they also learn through their understanding of personal hygiene, how to prevent disease from spreading when working with food.

**Spiritual, moral, social and cultural development**

The teaching of design and technology offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons. Our groupings allow children to work together, and give them the chance to discuss their ideas and feelings about their own work and the work of others. Through their collaborative and co-operative work across a range of activities and experiences in design and technology, the children develop respect for the abilities of other children and a better understanding of themselves. They also develop a respect for the environment, for their own health and safety and for that of others. They develop their cultural awareness and understanding, and they learn to appreciate the value of differences and similarities. A variety of experiences teaches them to appreciate that all people are equally important, and that the needs of individuals are not the same as the needs of groups.

**Teaching design and technology to children with special needs**

We teach design and technology to all children, whatever their ability. Design and technology also forms part of our school curriculum policy to provide a broad and balanced education to all children. Teachers provide learning opportunities that are matched to the needs of children with learning difficulties.

**Assessment and recording**

Teachers assess children’s work in design and technology by making assessments as they observe them working during lessons. They record the progress that children make by assessing the children’s work against the learning objectives for their lessons as set out in Key Stage skills and objectives. At the end of a piece of work, teachers make a judgement against the National Curriculum skills and objectives and will record this in their foundation files. Teachers then use this continuous assessment to plan the future work of each child and to make an annual assessment of progress for each child, as part of the annual report to parents.

The design and technology subject leader keeps photographic evidence of the children’s work in a portfolio. This demonstrates what the expected level of achievement is in design and technology in each year of the school.

**Health and safety**

The general teaching requirement for health and safety applies in this subject. We teach children how to follow proper procedures for food safety and hygiene. Hot melt glue guns, Stanley knives and staple guns should not be used by the children. Cool melt glue guns should be used with care. All food preparation and cooking will be overseen and a risk assessment carried out prior to the activity. All aspects of safeguarding will follow the school policy.

**Monitoring and review**

The monitoring of the standards of children’s work and of the quality of teaching in design and technology is the responsibility of the SLT and design and technology subject leader. The work of the subject leader also involves supporting colleagues in the teaching of design and technology and being informed about current developments in the subject.

**Accountability**

A annual action plan and termly summary report is produced for the Leadership team . These are then summarised by the Leadership team member with responsibility for the curriculum and shared with the Governing Body.

**Agreed by Governing Body:**

**Date of next Review: October 2017:**

