



Design and Technology Policy

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Date written:

September 2022

**Governor approval
date:**

October 2022

Review date:

September 2023

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1 Aims

This Design Technology Policy aims to:

- Ensure consistency in the approach to the teaching of Design Technology across school.
- Set out expectations for all members of the St John's community with regards to Design Technology.

2 Intent and Priorities

Intent

Design Technology should develop the creative, technical and practical expertise needed to perform everyday tasks confidently and successfully as well as prepare for the inevitable changes in everyday technology. At St. John's C of E Academy we want to allow children to aspire, through creating opportunities for them in the wider world. Through the Design and Technology curriculum, children will be inspired by engineers, designers, chefs and architects to enable them to create a range of structures, mechanisms, textiles, electrical systems and food products with a real life purpose. Whilst providing these opportunities, pupils will develop a critical and innovative eye when assessing the world around them by being encouraged to plan, critically reflect upon and evaluate their designs. Pupils' interests are captured through themed learning ensuring that links are made in a cross curricular way wherever possible, giving children motivation and meaning for their learning.

Priorities

- To provide exciting and challenging opportunities that allow pupils to plan and design creatively and imaginatively;
- To ensure children receive a progression of skills and experiences throughout their time at St. John's C of E Academy
- To allow pupils to be critical thinkers in order to reflect on their work through evaluation processes.

3 Aims and Objectives

The aims and objectives of the subject are as follows.

- Allow children to think imaginatively and discuss with both children and adults their likes and dislikes of certain products.
- To allow children to design and make innovative products with a genuine purpose.
- Give children opportunity to learn how different products function.
- To identify and accept drawing as a useful tool for expressing, communicating and developing ideas and to provide simple skills for this purpose.
- Let children design and make their own innovative products.
- Allow children to select appropriate equipment and materials for their product.
- Teach children safe methods and procedures when using their chosen product.
- To use effectively use ICT to enhance the design process and each stage.
- To foster enjoyment and satisfaction from the process of designing and making a product.

4 Implementation and Impact

Implementation

As a school, a variety of planning is used for design and technology. It is usually incorporated in to and related to the overriding topic the class is studying, along with other foundation subjects. As with all subjects, the primary aim is to develop knowledge skills and understanding. This is done by designing, making and evaluating products. This will be delivered through whole class and individual/small group activities. All children will be given the opportunity to collaborate with their peers to improve their designs. The Design and Technology within each topic will need to be reviewed, informally by the teachers and TA's within the year group to ascertain the enjoyment had by the children, the effectiveness of developing skills and the quality of purpose.

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;
- Grouping children by ability, and setting different tasks for each group;
- Providing a range of challenges through the provision of different resources;
- Using additional adults to support the work of individual children or small groups
- Providing specialist support where individual children have particular gifts or talents.

Impact

Children will learn how to take risks, becoming resourceful, innovative and enterprising citizen. 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.

5 Roles and Responsibilities

Subject Leader

The Design Technology coordinator is required to ensure that the subject is regularly discussed, reviewed and monitored within the school. Keep resources up-to-date and relevant, particularly in preparation for each unit of work. Promote Design Technology good practice through the school. Set a good example of Design Technology practice. Support long term planning for the whole school. Monitor and evaluate design technology through the school. Provide INSET if and when it is required. Liaise with other primary and secondary schools. Promote Design Technology's high profile in the school.

In addition to this, the quality of children's work and the quality of teaching is the ultimate responsibility of the subject leader. The coordinator must support colleagues in the teaching of Design Technology to ensure standards are kept high.

Teacher

It is the responsibility of class teachers to ensure the high quality teaching of Design Technology within their classroom. The skills ladder should be used to inform planning and teachers need to make sure that the plan, make and evaluate process is evident in their planning and teaching. Class teachers are responsible for ensuring that all Design Technology objectives are being met for their cohort. They are also responsible for ensuring that equipment and resources required for lessons are ordered and available for their lessons or they have let the subject lead know what is required.

Senior Lead

It is the responsibility of senior leaders to support teaching staff and phase leads with the implementation and monitoring of Design Technology across the school. They should hold teachers accountable within the teaching and assessment of Design Technology.

6 Design Technology Curriculum Planning.

Design and technology is listed as a foundation subject in the National Curriculum. Planning is in most cases cross curricular it is commonly linked to the overriding topic, local interest or spark by the children's own ideas. Planning is split into two phases, long term and medium term.

Long Term Planning

Long Term planning links in directly to the National Curriculum and the knowledge, skills and experience required in KS1 KS2 and foundation stage respectively. The commonly makes up the form of a mapping grid and activities and ideas linked to the topic are suggest to meet the necessary points on the National Curriculum.

Medium Term Planning

Medium term planning is usual interwoven into topic planning or as a block of D&T work linked to other foundation subjects. This will commonly vary from teacher to teacher in accordance with their own individual preference when it comes to planning foundation subjects.

Foundation Stage

We encourage the development of knowledge, skills and understanding that help foundation children make sense of their world as an integral part of the school's work. 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. Structured and independent learning activities are carefully constructed to allow children to reach relevant early learning goals. Here are the early learning goals that are specifically linked to design and technology, highlighted text links directly to design and technology.

Early Learning Goal 14: The World: *Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes*

Early Learning Goal 15: Technology: *Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.*

Early Learning Goal 16: Exploring and Using Media and Materials: *Children sing songs, make music and dance, and experiment with ways of changing them. They safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.*

Early Learning Goal 17: Being Imaginative: *Children use what they have learnt about media and materials in original ways, thinking about uses and purposes. They represent their own ideas, thoughts and feelings through design and technology, art, music, dance, role play and stories.*

Key Stage One

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].

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 wide range of tools and equipment to perform practical tasks.

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 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

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].

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.
Select 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

Technical knowledge: Apply their understanding of how to strengthen, stiffen and reinforce more complex structures.
Understand and use mechanical systems in their products.
Understand and use electrical systems in their products.
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.

7 Link with other policies.

English

Design and technology gives many opportunities for children to reinforce what they have done in their English lessons. Writing instructions of how to make a product is a key link between the two subjects and is often covered in KS1 as part of non-fiction writing. This may be through the critical analysis of a production through its evaluation, where comparisons are made of similar products. Drama and role play could be used to compare how characters feel about different products.

Mathematics

Measuring is a key way children can apply their mathematical knowledge to design and technology. This is commonly through the design process, where scale drawings of their designs could be used. Simple understanding of ratios would also be used here. Measuring accurately is important when creating a product. Children learn to measure and use equipment correctly. They apply their knowledge of fractions and percentages to describe quantities 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.

Science

Design and technology is applied to science in the design process for investigations. Children need to have a good understanding of the properties of materials and which will be the most effective for their products.

PSHE

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. 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.

Design and technology promotes social development as it gives lots of opportunities for the children to work together. Children are encouraged to discuss their ideas and give opinions of those of others. This develops a respect and tolerance to the ideas opinions and abilities of others. Equally, it develops children understanding and respect for the health and safety, understanding its effect on themselves and others. This is through the activities and equipment they use in design and technology lessons.

Computing and ICT

D&T assignments should provide pupils with opportunities to enhance their learning through incorporating the use of ICT. ICT can support D&T activities in some of the following ways;

- By providing a range of information sources and visual materials for research & background knowledge – e.g. through internet sources.
- By aiding the presentation of a completed project – e.g. through use of word-processed text or Digital Photography (annotations, instructions, packaging, evaluations etc.)
- By collecting and interpreting data collected during a project – e.g. through using a questionnaire on a database or displaying findings on a spreadsheet
- By employing Control Technology devices to help gain understanding of sequencing & control systems.
- By demonstrating how the latest technology is incorporated in commercial D&T processes and thus impacts on our everyday lives – e.g. through transmitting design information electronically via CD-ROM's & email, and through use of CAD/CAM and Control devices.

Resources

Our school keep a wide range of resources that support the teaching of design and technology. These can be found in the subject store which is outside the Foundation Stage unit. Basic equipment is kept by teachers in their classroom and additional equipment can be ordered and obtain through consultation with the subject coordinator.

Health and Safety

In this subject, the general teaching requirement for health and safety applies. We teach children how to follow proper procedures for handling tools, food safety and hygiene. If any resources become broken during use, the Design and Technology leader needs to be informed as soon as possible.

8 Teaching Design Technology to children with special needs.

Pupils with Special Educational Needs receive support from their class teacher to undertake appropriate tasks / projects matched to their needs and ability. All pupils will generally work in mixed ability groups, with individuals making a valued contribution to the overall process. This promotes self-reliance, self-esteem and a collaborative attitude. Pupils with learning difficulties who may need support with literacy and numeracy may well exhibit well-developed dextrous and practical skills, and should be provided with appropriate opportunities to develop their potential.

Opportunities should be provided for pupils to communicate their ideas other than through writing or drawing. Help in realising their ideas into drawings or models could be achieved through means of a facilitator. Pupils who possess physical difficulties in manipulating materials or tools may need specific support to help develop their skills into tangible experiences. Processes should be adapted to suit pupils with limited dexterity.

Pupils with physical disabilities should be given opportunities to use multi-sensory approaches to gain understanding about different products and to use this information to generate ideas. Able pupils who demonstrate a high ability level should be presented with increasingly challenging assignments within the context or theme of the whole-class project.

9 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. At the end of a unit of work, teachers make a judgement against the National Curriculum levels of attainment. Older children are encouraged to make judgements on ways in which their work can be improved. Teachers then use the levels that they record 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 and carers.

The subject leader keeps written and photographic 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.