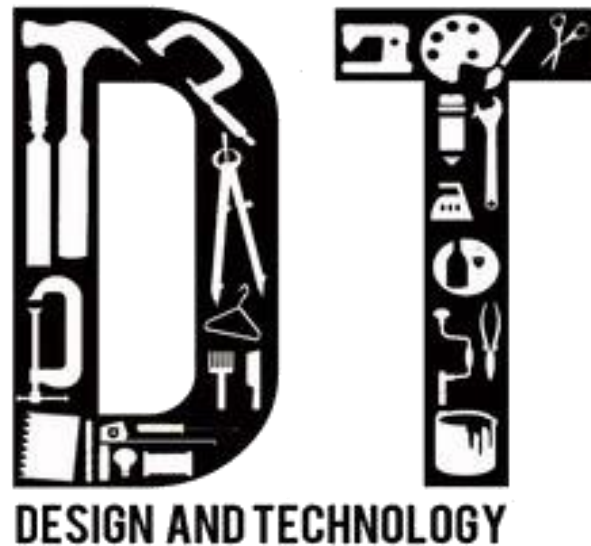




## **DESIGN & TECHNOLOGY POLICY**



**UPDATED: JANUARY 2024**

**NEXT REVIEW: JANUARY 2025**



## St. Joseph's Catholic Primary School

### Design Technology Policy

#### Definition:

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. Joseph's we view D&T as a subject which allows children to use their imagination and creativity to come up with design ideas which can be developed and extended through the process of 'making' and the 'acquisition of skills and knowledge'.

*"Design and Technology is an inspiring, rigorous and practical subject. Using creativity and imagination, pupils design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values. They acquire a broad range of subject knowledge and draw on disciplines such as mathematics, science, engineering, computing and art. Pupils learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. 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. High quality design and technology education makes an essential contribution to the creativity, culture, wealth and well-being of the nation."* (National Curriculum Document 2014)



## **Aims:**

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.

## **Intent Statement**

Intent – What we are trying to achieve?

- At St. Joseph's, it is our intent that Design and Technology encourages children to learn to think and intervene creatively to solve problems both as individuals and as members of a team. Creativity is a key element of our DT curriculum with the children at our school being encouraged to share new and innovative ideas which push the boundaries of their thinking and learning.
- We encourage children to use their imagination, to design and make products that solve real and relevant problems within a variety of contexts, considering their own and others' needs, wants and values.
- We aim to, wherever possible, link work to other disciplines such as mathematics, science, history, engineering, computing and art.
- The children are also given opportunities to reflect upon and evaluate past and present design technology, its uses and its effectiveness and are encouraged to become innovators and risk-takers.

Implementation – How do we translate our vision into practice?

- At St Joseph's, children receive a design and technology curriculum which allows them to exercise their creativity through designing and making. Using the DT design cycle (research, design, make and evaluate) the children are

encouraged to approach design criteria with their own imaginative vision which is also informed by their initial research.

- Across the DT curriculum, skills are taught progressively to ensure that all children are able to learn and practice in order to develop as they move through the school. The children's skills progress in four key areas of DT which are taught each year: food, textiles, structures and mechanisms. The use of CAD is used within Key Stage Two to enhance the products created by the children.
- All teaching of DT follows the design, make and evaluate cycle. Each stage is rooted in technical knowledge.
- The design process is rooted in real life, relevant contexts to give meaning to learning. The children are taught to combine their designing and making skills with knowledge and understanding in order to design and make a product. Pupils use research and develop design criteria to design for a purpose and communicate their ideas through a range of mediums.
- While making, children are required to use a wide range of tools and equipment with increasing accuracy and use a wide range of materials and components according to their qualities.
- Evaluation is an integral part of the design process and allows children to adapt and improve their product, this is a key skill which they need throughout their life. Pupils evaluate their ideas and products against their own design criteria and consider the views of others to improve their work.
- D&T is taught in a cross-curricular context and allows children to apply the knowledge and skills learned in other subjects, particularly Maths, Science and Art. Where relevant DT topics are linked to the children's curriculum learning in subjects such as Geography and History.
- Children's interests are captured through theme learning, ensuring that links are made in a cross curricular way, giving children motivation and meaning for their learning. A passion for DT has been promoted through the use of activities linked to the children's interests and learning.
- Children will learn basic cooking skills each year, the skills developed build upon one another to support the children in developing this fundamental life skill.

### Impact – What is the impact of our curriculum on the students?

We ensure the children:

- 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 and 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 through the development of fundamental cooking skills.
- Design and make a range of products; a good quality finish will be expected in the designs created by the children and the prototypes developed. All of the activities taught will be made appropriate to the age and ability of the child to support every child in creating a quality product which both reflects their design and is a piece which they are proud to present as their final product.
- Learn how to take risks, becoming resourceful, innovative, enterprising and capable citizens. 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.
- Are encouraged to reflect upon the products and designs which they produce to support their critical and evaluative thinking in order for them to make relevant adjustments and enhancements to their work. They will also be given the opportunity to receive feedback from their peers to support them in becoming evaluative thinkers.
- Receive a high-quality design and technology education which makes an essential contribution to the creativity, culture, wealth and well-being of the nation.

By the time children leave our school they will also have developed:

- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others.
- The ability to carry out thorough research, show initiative and ask questions to develop an exceptionally detailed knowledge of users' needs.
- The ability to act as responsible designers and makers, working ethically, using finite materials carefully and working safely.
- A thorough knowledge of which tools, equipment and materials to use to make their products.

- The ability to apply mathematical knowledge and skills accurately.
- Basic cooking skills which will support them in developing this life skill.
- Critical thinking skills when reflecting on both their work and the designs or products of others (whether peers or acclaimed designers).
- Creative and innovative thinking skills.

## **Foundation Stage**

We encourage creative work in our Reception class, as this is part of the Foundation Stage Curriculum. We relate the creative development of the children to the objectives set out in the Foundation Stage Assessment, which underpin the curriculum planning.

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.

Setting the children's learning, we provide a rich environment in which we encourage and value creativity. Children experience a wide range of activities both inside and outside of the classroom so that they respond to and use a range of senses. The activities that they take part in are imaginative and enjoyable.



## **KS1 Objectives**

Through a variety of creative and practical tasks/activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive developmental process of designing and making. They should be encouraged to work on a range of relevant contexts (eg. Home, school, gardens, 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

KS1 children will undertake at least one unit of work per term. They will also have opportunities during D&T lessons to develop their own ideas and generate designs independently. Progression of D&T skills will be monitored by staff formally and informally with reference to expectations from the National Curriculum.

*Planning will follow our medium term planning linked to National Curriculum guidelines.*

## **KS2 Objectives**

Through a variety of creative and practical tasks/activities, pupils should be taught the knowledge, understanding and skills needed to engage in an interactive developmental process of designing and making. They should be encouraged to work on a range of relevant contexts (eg. 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

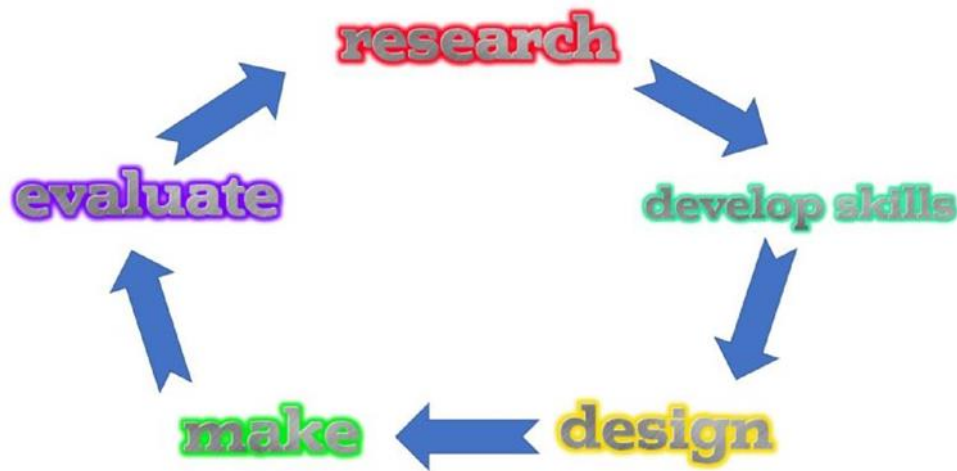
### **KS2 teachers must remember:**

- KS2 children should be encouraged to be creative and innovative when designing and making products.
- Throughout the ‘making’ process they should recognise the importance of making on-going changes and improvements in their designs in order to ensure that the final product is fit for purpose and is of a high quality.
- Where possible designs should link in with Computing and coding
- children should be provided with the opportunity to research key events and individuals that have made significant design influences on everyday life.
- D&T consists of two strands - Designing and Making + Cooking and Nutrition. Teachers should ensure that D&T lessons consider the seasonality of ingredients and how they are grown, caught or reared

### **Teaching and Learning:**

Design Technology activities are taught in a variety of ways across St. Joseph’s Catholic Primary School, sometimes in blocks of taught time, as part of a topic, or in short skills-based activities where necessary. Design Technology has relevance across the curriculum and links with other subjects throughout the school. For example, most of our Design Technology has been incorporated into St. Joseph’s long-term planning of Science, IT, History and Geography topics. These links can be seen on our whole-school planning grids. Progression is key to our DT planning with the skills developed building upon the children’s previous learning whilst ensuring that they are appropriately challenged as they move up through the school. Through our DT curriculum the children’s skills will be developed through structures, mechanisms, electronics (in Key Stage Two), textiles and cooking, allowing them to apply these skills to a relevant project.

Children will be taught by staff whether EYFS, KS1 or KS2. External specialists will be used to support the delivery of the curriculum where possible or necessary.



### **Assessment and recording:**

- The D&T Subject Co-ordinator will keep a photographic portfolio of drawings, pictures and finished products – creating a floor book of exemplars which can be used for assessment purposes and for monitoring progression.
- Class teachers are responsible for accurately assessing pupils' D&T attainment – these assessments are carried out termly and are based on emerging, developing, secure and mastery within the standards of each Year group. This follows the agreed system which is in place covering all curriculum subjects at St. Joseph's.
- Assessments are completed at the end of each term and inputted into the online assessment trackers set up for D&T on the school's iTrack system. The DT Co-ordinator has access to this data to allow reports to be developed.
- The D&T Co-ordinator is responsible for collecting assessment data from the spread sheets and inputting percentages into the Subject Leaders' summary reports.
- Displays of D&T work are encouraged – these should include design ideas, drawings, patterns, quick models and final products to demonstrate the D&T process.
- One staff meeting a year will be held to carry out agreement trailing. Teachers will be asked to identify a child working at a specific level and bring examples of work. This work will contribute to the D&T portfolio.
- The D&T Co-ordinator will present at least one report to the Governing Body to inform governors of how well the subject is being taught.

- Once a year a the DT Co-ordinator will conduct a book scrutiny to assess the engagement of children with this subject and the quality of teaching being provided in these lessons.
- Children's views of the subject will be assessed through the use of questionnaires to determine their opinions of the teaching and learning of this subject.

### **Expectations:**

By the end of Key Stage 1, the performance of the great majority of the pupils should be Y2 secure.

By the end of Key Stage 2, the performance of the great majority of the pupils should be Y6 secure.

### **Inclusion:**

We recognise the fact that we have children of differing ability in all our classes, and so we 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 that are essential to developing a more inclusive curriculum:

- Setting common tasks that are open-ended and can have a variety of outcomes.
- Providing appropriate support to pupils to access information or aid fine or gross motor skills issues.

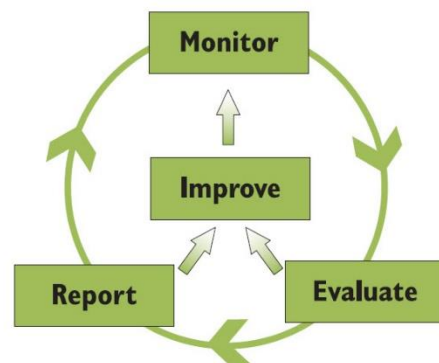
### **Responses;**

- Setting tasks of increasing difficulty where not all children complete all tasks;
- Providing a range of challenges with different resources;
- Using additional adults to support the work of individual children or small groups.
- ICT programmes and appropriate tools and equipment are provided to ensure that all pupils have sufficient access to the Design Technology curriculum.
- Ensuring that children with Special Educational Needs will be given an equal opportunity to study Design Technology. These children will be provided with all of the necessary materials to succeed and be inspired, supported by their 1-1 support where necessary.

- The DT Co-ordinator will liaise with the SENCO to ensure that every child has differentiated access to Design and Technology so that they can achieve their full potential in this subject, including provision of adapted and differentiated resources where necessary.

### **The Role of the D&T Co-ordinator is to:**

- Lead the development of D&T in school
- Provide guidance to individual members of staff
- Keep up to date with local and national developments in D&T 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 D&T resources
- Co-ordinate any displays of D&T
- Co-ordinate the collection of samples of work for the D&T portfolio.
- Ensure governors are kept up-to-date with progress across the school – re data – assessments, quality of teaching and learning, workshops, training etc.



### **Health and Safety:**

All teachers must:

- Make sure that all children are aware of safety procedures and any potential dangers. These should be discussed with the class prior to making any products to establish a clear risk assessment. The children must be aware of the steps which they will take to mitigate any risks.
- Make it clear which tools are for:
  - Teachers only
  - For use only under teacher (adult) supervision
  - For pupils use



- Make sure that all pupils are shown how tools should be used. Before the children handle any tools, they must witness good practice through clear modelling. The risks associated with bad practice should also be established.
- Position workstations in an appropriate place so that the children are always under adult supervision whilst working.
- Where full class adult supervision is not possible small group work should be used to prevent any risk of injury.
- All work areas should be checked for dangers prior, during and after working.
- All tools must be stored in safe location when not being used so that these are not accessible unless an adult is present. After any tools have been used they should be placed back in their designated location.
- In Food Technology all surfaces and utensils should be cleaned regularly.
- When handling any food products, the children should thoroughly wash their hands as should any adult handling food.

**The role of parents and carers:**

Parents and carers are encouraged to be involved with their pupils' learning through looking at Design Technology displays, and viewing and commenting on any work that has been added to St. Joseph's Catholic Primary School website. Where relevant DT homework can be set to further extend the children's learning in this subject.

**Review:**

Curriculum plans, samples of pupils' work, classroom displays and discussions with staff will be used by the Design Technology Co-ordinator to evaluate the quality of the Design and Technology curriculum in the school.