



**St John's Church of England  
Academy**

**Belonging Believing Becoming**



# Design and Technology Policy

**Date of Review: April 2020**

**Date of Next Review: July 2021**

**Responsible Group: School Policy**



## Design and Technology Policy

**‘Design is not just what it looks like and feels like design is how it works.’ Steve Jobs**

### Curriculum Intent

Through the delivery of our curriculum, we want our children to be ready for life beyond St John’s. We aspire for them to be:

- **Articulate**
- **Aspirational**
- **Curious**
- **Appreciative**

### Subject Intent

St John’s Church of England Academy understands that Design and Technology allows pupils to solve problems, think creatively and develop ideas. Design & Technology offers pupils a chance to use creative thinking and activity within a defined purpose and tangible outcome. The school is committed to nurturing pupils’ curiosity and creativity, as well as preparing them for living in a modern world where technology is rapidly changing and advancing.

### Aims

In teaching Design and Technology, we aim to help pupils:

- Develop their design and making skills.
- Develop their knowledge and understanding of design and technologies.
- Use a wide range of tools and materials.
- Learn about working safely and protective measures.
- Work individually and collaborate with other pupils in a variety of contexts.
- Develop the capability to create products of a high standard through skills and understanding.
- Evaluate products, made by themselves, their peer groups and companies.
- Explore the man-made world and encourage discussion of how we live and work within it.
- Develop an interest in and understanding of technological processes and the role of manufacturing in society.
- Learn the principles of nutrition, healthy eating and how to cook.

### Legal Framework

This policy has due regard to statutory legislation and guidance including, but not limited to, the following:

- DfE (2013) ‘Design and technology programmes of study: key stages 1 and 2’
- DfE (2017) ‘Statutory framework for the early years foundation stage’

## **Roles and responsibilities**

### **The headteacher is responsible for:**

- Holding the subject leader to account for pupils' attainment.
- Assisting the subject leader in reviewing and updating this policy annually.
- Supporting the subject leader in identifying CPD opportunities for themselves and classroom teachers.
- Promoting the needs of all pupils and ensuring they can access a well-rounded and inclusive curriculum.

### **The subject leader is responsible for:**

- Preparing policy documents, curriculum plans and schemes of work for the subject.
- Attending training courses and undertaking CPD opportunities for themselves.
- Reviewing changes to the national curriculum and advising staff on new developments and assisting in their implementation.
- Working with classroom teachers to plan lessons and ensure continuity and progression from year group to year group.
- Monitoring the learning and teaching, providing support for staff where necessary.
- Encouraging staff to provide effective learning opportunities for pupils.
- Helping to develop colleagues' expertise in the subject.
- Organising the deployment of resources and carrying out an annual audit of all resources.
- Liaising with teachers and holding them to account for the attainment achieved.
- Communicating developments in the subject to all teaching staff.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in the subject.
- Ensuring common standards are met for recording and assessment.
- Advising on cross-curricular and extra-curricular activities.
- Collating assessment data and setting new priorities for development of science in subsequent years.
- Identifying areas for improvement and ensuring these are included in a subject specific action plan and form part of the SDP.
- Liaising with subject leaders from local Primary and Secondary Schools.

### **The classroom teacher is responsible for:**

- Working with the subject leader to ensure the high-quality delivery of the curriculum and continuity between year groups.
- Acting in accordance with St John's Church of England Academy's Policies.
- Ensuring progression of pupils' skills with due regard to the national curriculum.
- Planning engaging and interesting lessons, ensuring a range of teaching methods are used to cover the content of the national curriculum.
- Monitoring the progress of pupils in their class and reporting this on an annual basis.
- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the senior leadership team (SLT).
- Undertaking any training that is necessary in order to effectively teach the subject and improve practice.
- Reporting on pupils' progress at parents' evenings and in end of year reports.

### **The Specialist Educational Needs and Disabilities Co-ordinator (SENDCO) is responsible for:**

- Liaising with the subject leader in order to implement and develop the subject throughout the school.
- Organising and providing training for staff for pupils with special educational needs and disabilities (SEND).
- Advising staff how best to support pupils' needs.
- Advising staff on the inclusion of objectives in pupils' individual education plans.
- Advising staff on the use of teaching assistants in order to meet pupils' needs.

### **The Curriculum**

#### **Early Years Provision**

Activities and experiences for pupils will be based on the seven areas of learning and development, as outlined in the DfE's 'Statutory framework for the early years foundation stage'. All areas of learning and development are important and inter-connected. Three areas are particularly crucial for igniting children's curiosity and enthusiasm for learning, and for building their capacity to learn, form relationships and thrive. These three areas, the prime areas, are:

- communication and language
- physical development
- personal, social and emotional development

Children will also be supported in four specific areas, through which the three prime areas are strengthened and applied. The specific areas are:

- Literacy
- Maths
- Understanding the world
- Expressive arts and design

All pupils in EYFS are taught art and design as an integral part of the topic work covered during the academic year.

The art curriculum in the EYFS focusses on the specific areas of understanding the world and expressive arts and design.

Pupils will be taught to:

- Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design and texture, form and function.
- Represent their own feelings through art, as well as music, dance, role play, storytelling and D&T.

#### **The National Curriculum**

The school aims to assist pupils in achieving attainment targets set out in the national curriculum. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills, and processes specified in the national curriculum. Pupils will learn a broad range of subject knowledge and draw on disciplines such as maths, science, engineering, computing and art.

In accordance with the national curriculum, the school 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 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.

## **KS1**

By the end of KS1, pupils will be able 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 and mock-ups and, where appropriate, ICT.

### **Make**

- Select from and use a range of tools and equipment to perform practical tasks, e.g. 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, e.g. levers, sliders, wheels and axles, in their products.

Through a variety of creative and practical activities, pupils will be taught the knowledge, understanding and skills needed through a variety of creative and practical activities. They should work in a range of relevant contexts, e.g. the home, school, leisure, enterprise, industry and the wider environment.

## **KS2**

By the end of KS2, pupils will be able 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 accurately, e.g. cutting, shaping, joining and finishing.
- 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 D&T 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, e.g. gears, pulleys, cams, levers, and linkages.
- Understand and use electrical systems in their products, e.g. 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 will be taught how to cook and apply the principles of nutrition and healthy eating. 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.

By the end of KS1, pupils will be able to:

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

By the end of KS2, pupils will be able to:

- 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.

### **Cross-curricular links**

Design and Technology contributes to the teaching of a number of other subjects in school.

#### **English**

- D&T offers the opportunity to reinforce what pupils have been learning during English lessons. Discussion, drama and role-play are important methods that the school employs to help pupils develop an understanding of people's different views and opinions of D&T and society.
- Evaluating products requires pupils to articulate and formulate their ideas to compare their views with other pupils'; through discussion, pupils will learn to justify their own views and clarify their design ideas.

#### **Maths**

- D&T will assist pupils in learning about shape and size and will make use of what they have already learned in maths lessons. Pupils will carry out investigations – by doing this, they will learn to read and interpret scales, collect and present data, as well as draw their own conclusions.

#### **PSHE**

- D&T lessons will be used to teach pupils how to discuss their own work and the work of others; in addition, pupils will be taught about health and hygiene, including diets, and how to prevent disease from spreading when working with food.

#### **Spiritual, moral, social and cultural (SMSC) development**

- Teaching D&T offers opportunities to support the social development of pupils through the way they are expected to work with each other in lessons. D&T helps pupils to develop a respect for other pupils' abilities. Working in groups encourages collaboration and gives pupils the opportunity to learn from each other and share ideas and feelings.

#### **Computing**

- Computing enhances the teaching of D&T and provides pupils with additional equipment, extending the possibilities for developing, sharing and recording their work.
- Utilising ICT also benefits pupils by helping them collect information and present their designs and ideas through a range of design and presentation software.

## Teaching and Learning

Pupils will be taught to describe associated processes and key characteristics in common language, as well as understand and use technical terminology and specialist vocabulary.

- The school uses a variety of teaching and learning styles in D&T lessons, the main aim of these lessons is to develop pupils' knowledge, skills and understanding. Teachers will ensure pupils apply their knowledge and understanding when developing ideas, planning and making products, and then evaluating them.
- The school aims to do this through a mixture of whole-class teaching, group work, and individual activities. Pupils are given the opportunity to work on their own and collaborate with others, listening to their classmates' ideas and treating these with respect.
- Principles for effective teaching include:
  - Setting tasks in the context of pupils' prior knowledge.
  - Promoting active learning.
  - Inspiring, exciting and motivating pupils to know more.
- Strategies for effective teaching include:
  - Ensuring the teaching methods used suit the purpose and needs of pupils.
  - Providing a meaningful context and clear purpose when assigning tasks.
  - Investigating, disassembly and evaluative activities.
  - Using focussed practical tasks to help pupils make and evaluate products.
  - Ensuring tasks are built on skills and understanding.
- Teaching and learning styles are adapted to support pupils with SEND to ensure these pupils continue to have their confidence and self-esteem raised.

## Planning

Planning of the design and technology curriculum is focussed on creating opportunities for pupils to:

- Use a wide range of materials.
- Produce creative work, explore their ideas and record their experiences.
- Learn how to gather and evaluate different materials.
- Evaluate and analyse their work and that of others using DT vocabulary.
- Discuss ideas and planning with their peers.
- See that their work is valued, celebrated and displayed.
- The school creates long-term, medium-term and short-term plans for the delivery of the DT curriculum – these are as follows:
  - Long-term: includes the topics studied in each term during the key stage
  - Medium-term: includes the details of work studied each term
  - Short-term: includes the details of work studied during each lesson
- The subject leader is responsible for reviewing and updating long-term and medium-term plans, and communicating these to teachers.
- Teachers are responsible for reviewing and updating short-term plans, building on the medium-term plans, taking into account pupils' needs and identifying the methods in which topics could be taught.
- All relevant staff members are briefed on the school's planning procedures as part of their staff training.
- There will be a clear focus on direct, instructional teaching and interactive oral work with the whole class and targeted groups.
- All lessons will have clear learning objectives, which are shared and reviewed with pupils.

## Assessment and Reporting

### EYFS

Belonging

Perseverance

Respect

Forgiveness

Truth

Aspiration

- An EYFS profile will be completed for each pupil in the final term of the year in which they reach age five.
- The progress and development of pupils within the EYFS is assessed against the early learning goals outlined in the 'Statutory framework for the early years foundation stage'.

### **KS1 and KS2**

- Throughout the year, teachers will plan on-going assessment opportunities in order to gauge whether pupils have achieved the key assessment criteria.
- Pupils' D&T work may be assessed throughout the design process and by teachers judging recorded work. Teachers will also assess pupils':
  - Knowledge of tools, materials and equipment.
  - Ability to record and communicate their design ideas in a clear manner.
  - Personal qualities and attitudes towards their work.
  - Ability to explain what they have created and how.
  - Ability to use tools and materials safely and effectively.
  - Ability to evaluate their work and the work of others.

### **Assessment will be undertaken in various forms, including the following:**

- Talking to pupils and asking questions
- Discussing pupils' work with them
- Observing practical tasks and activities
- Pupils' self-evaluation of their work

Formative assessment, which is carried out informally throughout the year, enables teachers to identify pupils' understanding of subjects and informs their immediate lesson planning.

In terms of summative assessments, the results of end of year assessments will be passed to relevant members of staff, such as the pupil's future teacher.

Parents will be provided with a written report about their child's progress during the summer term every year.

Pupils with special educational needs and disabilities (SEND) will be monitored by the special educational needs coordinator.

### **Equipment and Resources**

- The school has a selection of centrally stored materials, tools and equipment to ensure that all pupils have access to the necessary resources.
- The school library contains resources and topic books to support pupils' research.
- The curriculum budget covers the cost of materials and replacement tools.
- Pupils may occasionally be asked to bring materials from home if they can; however, to provide all pupils with the same opportunities, the school will provide for pupils who are unable to do this.
- At the start of each school year, the subject leader will work with the headteacher to assess the school's art tools, materials and equipment to ensure there is sufficient equipment for pupils, allowing for funds to be allocated where necessary.

### **Health and Safety**

Belonging    Perseverance    Respect    Forgiveness    Truth    Aspiration

- In order to maximise their learning experience, pupils are allowed full access to a wide range of materials in D&T lessons; however, health and safety concerns are inherent with D&T, including storing materials and tools, and the use of equipment.
- The risks of each task and the tools required will be assessed by the classroom teacher and subject leader before lesson.
- Pupils will be taught to use tools and equipment properly by the classroom teacher before use. They will also be fully briefed on the importance of how to correctly use tools and equipment.
- All tools, such as glue guns, will be checked before use by the class teacher. It is also the duty of staff to recognise and assess the hazards and risks associated when working with food and other materials.
- Staff members will act in accordance with the school's Health and Safety Policy at all times.
- Accidents will be reported following the school's Accident Reporting Procedure Policy.
- All pupils will be shown how to correctly use equipment and will be monitored by staff members whilst using equipment.
- All pupils will be made aware of how they are expected to behave, ensuring that they show respect to other people and the environment.
- Perishable food will be stored sensibly and refrigerated if necessary. Care must be taken by teachers and teaching assistants to ensure food is not used after the given sell by date
- A fire safety blanket will be kept next to the cooker at all times.
- If any cooking or food preparation is taking place in the classroom, all surfaces will be cleaned before and after use.
- Correspondence will be sent to parents before cooking lessons to ensure pupils' allergies are taken into account.

### **Equal opportunities**

- We are an inclusive school that ensures all pupils are provided with equal learning opportunities, regardless of social class, gender, culture, race, disability or learning difficulties.
- Where it is inappropriate for a pupil to participate in a lesson because of reasons related to any of the factors outlined above, the lessons will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.
- In order to ensure pupils with SEND achieve to the best of their ability, outcomes are adapted, and the delivery of the art curriculum is differentiated for these pupils.

### **Monitoring and review**

- This policy will be reviewed on an annual basis by the subject leader, in collaboration with the headteacher.
- The subject leader will monitor teaching and learning in Design and Technology at St John's Church of England Academy, ensuring that the content of the national curriculum is covered.
- Any changes made to this policy will be communicated to all teaching staff.