

Design and Technology Policy





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1. Statement of Intent

Design and Technology Curriculum:

At St Peter's we believe that Design and Technology prepares children to take part in the development of the rapidly changing world. Creative thinking encourages children to make positive changes to their quality of life. The subject encourages children to become innovative and creative thinkers and problem-solvers, both as individuals and as part of a team.

At St Peter's, through the study of Design and Technology, children combine practical skills with an understanding of aesthetic, social and environmental issues. This allows children to analyse and evaluate past and present designs, its uses and its impacts. Design and Technology helps all children to become discriminating and informed consumers and potential innovators.

Through DT lessons, children learn to produce practical solutions to real problems and develop technical understanding and making skills, they learn about design methods and investigate their environment and the materials around them.

Communication is vital in DT; children are encouraged to listen to the ideas of others, and treat them with respect, to critically evaluate existing products, both their own work and those of others. They have the opportunity to use a wide range of materials and resources, including ICT.

2. Legal Framework

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

- DfE (2013) 'Design and Technology: key stages 1 and 2'
- DfE (2017) 'Statutory framework for the Early Years Foundation Stage'
- Equality Act 2010

2.2 This policy operates in conjunction with the following school policies:

- Equal Opportunities Policy
- Primary Assessment Policy
- SEND Policy

3. Roles and Responsibilities

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

- Preparing policy documents, curriculum plans and schemes of work for DT.
- Reviewing changes to the National Curriculum and advising teachers on the implementation of these.
- Monitoring the learning and teaching of DT, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Helping to develop colleagues' expertise in DT.
- Organising the deployment of resources and carrying out an annual audit of all related resources.
- Liaising with teachers across all phases.
- Liaising with the **SENCO** about support for pupils with SEND.
- Communicating developments in the teaching of DT to all teaching staff and the SLT as appropriate.
- Leading staff meetings and providing staff members with the appropriate training.
- Organising, providing and monitoring CPD opportunities in DT.
- Ensuring common standards are met for recording and assessing pupil performance.
- Advising on the contribution of DT to other curriculum areas, including cross-curricular links and extra-curricular activities.
- Collating assessment data and setting new priorities for the development of DT in subsequent years.

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

- Acting in accordance with this policy.
- Ensuring the progression of pupils' DT skills, with due regard to the National Curriculum.
- Planning lessons effectively, using the school's chosen scheme of work and ensuring a range of teaching methods are used to cover the content of the National Curriculum.
- Sharing and displaying pupils' work in a way that enhances the learning environment and promotes a variety of ideas and designs.
- Liaising with the **subject leader** about key topics, resources and support for individual pupils.
- Monitoring the progress of the pupils in their class and reporting this to parents on an annual basis.
- Reporting any concerns regarding the teaching of the subject to the subject leader or a member of the SLT.
- Undertaking any training that is necessary to effectively teach DT.
- Evaluating schemes of work and maintaining the resources required to deliver lessons.

3.3 The **SENCO** is responsible for:

- Liaising with the **subject leader** to implement and develop specialist DT-based learning throughout the school.
- Organising and providing training for staff regarding the curriculum for pupils with SEND.
- Advising staff on how best to support pupils' needs.
- Advising staff on the inclusion of DT in pupils' learning support plans (LSPs).
- Advising staff on the use of TAs to meet pupils' needs.

4. Curriculum Objectives

4.1 The Design and Technology Curriculum will allow pupils to:

- Use creativity and imagination to solve real and relevant problems.
- Understand the need to follow a specification to design and make a product fit for the intended user and purpose.
- Use mathematics, science, engineering, computing and art in real life contexts.
- Take risks; become resourceful and innovative.
- Evaluate and analyse past and present designs; understand the impact design has on the world.
- Study a range of great designers; both men and women of different races, ethnic groups and religious beliefs and how they have contributed to the country we live in today.
- Design, make and evaluate purposeful, functional and appealing products for themselves and others, based on design criteria.
- Learn how to safely use a range of tools and equipment to perform practical tasks.
- Learn about different materials and components; their functional qualities and aesthetic qualities.

4.2 As part of their cooking and nutrition, pupils will:

- Be taught how to prepare and cook food for themselves and others.
- Apply the principles of nutrition and healthy eating.
- Understand and know how and where a variety of ingredients come from.
- Develop a love of preparing and cooking food.

5. Subject Content

5.1 Foundation Stage:

All pupils in the EYFS are taught DT as an integral part of the play-based learning covered during the academic year.

All DT objectives within the EYFS are underpinned by the following three prime areas outlined in the 'Statutory framework for the Early Years Foundation Stage':

- Communication and language
- Physical development
- Personal, social and emotional development

There are four specific areas through which the three prime areas are strengthened and applied:

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

The DT curriculum in EYFS focuses on the specific areas of **expressive arts and design** and **being imaginative**

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 DT.

5.2 EYFS End Point:

By the end of Foundation 2, pupils will have safely explored and used a variety of tools, techniques and materials. They will have learnt about how to use and combine media and materials and represented their own thoughts, feelings and ideas through discussions, drawings and models. This will prepare children to readily access the KS1 curriculum.

5.3 Key Stage 1:

Key Stage 1 pupils will:

- Be taught knowledge, understanding and skills needed to engage in an iterative process of designing and making.
- Work in a range of relevant contexts, for example, the home and school, gardens and playgrounds, the local community, industry and the wider environment.

5.4 **KS1 End Point:**

By the end of Key Stage 1, pupils will be taught the knowledge, understanding and skills needed to support them through the process of designing and making. Pupils will be taught about design criteria and show that they can design for themselves and an intended user, based on a specification. In KS1, pupils will communicate their thoughts and ideas through discussions, drawings, labels and models. They will safely select and use a range of tools and equipment and have opportunities to evaluate existing products, as well as their own work.

5.5 **Key Stage 2:**

Key Stage 2 pupils will:

- Through a variety of creative and practical activities, be taught the knowledge, understanding and skills needed to engage in an iterative process of designing and making.
- Work in a range of relevant contexts, for example, the home, school, leisure, culture, enterprise, industry and the wider environment.

5.5 **KS2 End Point:**

By the end of KS2, pupils will be taught the knowledge, understanding and skills needed to engage in the design process for a range of relevant contexts. They will learn about great designers and engineers and how they have helped to shape the world in which we live.

Pupils will use research to inform design criteria and design ideas. They will design and make appealing products that are fit for purpose, using a design specification. Pupils will communicate their ideas through discussions, annotated sketches, cross-section drawings, exploded diagrams, prototypes, pattern pieces and computer-aided design. Pupils will safely select and use a wide range of tools and equipment to perform practical tasks and make decisions about materials based on functional properties.

Pupils will explore and practise skills and techniques to allow them to decide which is the most appropriate method to use. This will help them to think critically and effectively problem solve.

5.6 **Cooking and Nutrition:**

Throughout KS1 and KS2, pupils will be taught how to prepare and cook food whilst applying the principles of healthy eating and nutrition. Through teaching food and nutrition, pupils will learn crucial life skills which will enable them to feed themselves and others affordably well now and in the future.

5.7 **Key Stage 1:**

By the end of Key Stage 1, pupils will know and understand the basic principles of a healthy and varied diet. They will understand where fruit and vegetables come from and be able to prepare dishes.

5.8 **Key Stage 2:**

By the end of KS2, pupils will have some basic knowledge about **The Eatwell Plate** and be able to talk about the need for a healthy, varied diet. They will prepare and cook a variety of dishes, using a range of cooking techniques. Pupils will understand and know how a variety of ingredients are grown, reared, caught and processed.

6. Equal Opportunities

- 6.1 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. Our **Equal Opportunities Policy** ensures all pupils are able to achieve their potential in all areas of the curriculum.
- 6.2 In order to ensure pupils with SEND achieve to the best of their ability, outcomes are adapted, and the delivery of the DT curriculum is differentiated for these pupils, in line with the school's **SEND Policy**.
- 6.3 The planning and organising of teaching strategies for DT will be reviewed on a **termly** basis by the **subject leader** using the scheme Projects on a Page to ensure that no pupil is at a disadvantage.
- 6.4 The school aims to maximise the use and benefits of DT as one of many resources to enable all pupils to achieve their full potential.

7. Cross Curricular Opportunities

7.1 English:

Design and Technology enhances English through **spoken language** by:

- Participating in discussion, taking turns and listening to what others say.
- Asking relevant questions to extend their knowledge and understanding.
- Listening and responding appropriately to adults.
- Providing opportunities for pupils to give verbal descriptions and explanations.
- Providing opportunities for pupils to consider and evaluate different opinions.
- Using discussions as a way to explore ideas and viewpoints.

Design and Technology enhances English through **writing** by:

- Providing opportunities for pupils to write for real purposes and audiences.
- Developing descriptive writing based on first-hand experience. For example, using their sense when analysing food products.
- Writing instructions on how to make their product.
- Providing opportunities for pupils to write a simple account about how they made their product; using appropriate text type features.
- Using persuasive writing to promote and advertise their final product.

7.2 Mathematics:

Design and Technology enhances **Mathematics** by giving pupils opportunities to:

- Use directional language: describe position, direction and movement.
- Use appropriate standard and non-standard measures.
- Use a ruler to measure to the nearest cm, half cm or mm.
- Recognise and name common 2-D and 3-D shapes.
- Draw 2-D shapes when designing.
- Create and explore nets of shapes; make 3-D shapes using modelling materials.
- Carry out a simple survey to find out which are the favourite fruits/vegetables/vehicles/ colours etc. and use this data to construct and interpret the information in e.g. pictograms and bar graphs.

- Interpret data to inform design decisions.

7.3 **Computing:**

Design and Technology enhances **Computing** by giving pupils opportunities to:

- Use digital text and graphics within their products.
- Take photographs to help order the main stages of making.
- Use computer-aided design to produce pattern pieces.
- Design and create digital images on screen using computer-aided design (CAD).
- Design, write and debug programs that accomplish specific goals.
- Use technology for research.

7.4 **Art and Design:**

Design and Technology enhances **Art and Design** by giving pupils opportunities to:

- Use colour, pattern, line, shape and texture.
- Use and develop drawing skills when designing.
- Explore a range of media and materials creatively to design and make products.
- Investigate aesthetic and functional qualities of fabrics and use colour and pattern appropriately.
- Use and explore a range of tools, equipment and decorative techniques.
- Develop sketching techniques to share ideas.

7.5 **Geography:**

Design Technology enhances **Geography** by giving pupils opportunities to:

- Use simple fieldwork and observational skills to identify how to enhance the location.
- Learn about where natural resources come from; understand and know how a variety of ingredients are grown, reared, caught and processed.

7.6 **Science:**

Design Technology enhances **Science** by giving pupils opportunities to:

When learning about materials:

- Talk about everyday materials; investigate physical properties of fabric types against suitability for the product to be made.
- Compare and group together everyday materials on the basis of their properties.

When learning about plants:

- Know that plants have leaves, stems, roots, flowers and fruits; understand the importance of growing plants and how seasons affect growth. (seasonality of food)

When learning about animals including humans:

- Learn that humans get nutrition from what they eat; understand about a balanced diet and recognise the impact of diet on the way their bodies function.
- When cooking, use and develop skills of observing, questioning, changing the state of ingredients.

When learning about electronics:

- Use knowledge and understanding of circuits, switches, conductors and insulators.
- Know how to construct simple series circuits and have a basic understanding of conductors, insulators and open and closed switches.

When working scientifically:

- Ask simple questions and observe closely.
- Plan different types of scientific enquiries to answer questions.

7.7 History:

Design and Technology enhances History by giving pupils opportunities to:

- Investigate products past and present; look at how products have developed over time.
- Use a timeline to place the products in chronological order.
- Learn about a significant person/people in their locality linked to Design and Technology.

8. Health and Safety

- 8.1** Pupils are allowed access to a wide range of materials in DT, to maximise their learning experience; however, health and safety concerns are inherent with this subject, including storing materials and tools, and the use of equipment.
- 8.2** PPE, such as gloves, eye protection and aprons, is made available to all pupils and teachers where required.
- 8.3** Risk assessments are required and will be assessed by the classroom teacher and subject leader before lessons, and relevant PPE will be compulsory based on their decisions.
- 8.4** All tools and equipment will be checked before the start of every lesson by the classroom teacher.
- 8.5** 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.
- 8.6** All tools and equipment are kept in a store cupboard at the side of the stage.
- 8.7** All staff who teach cooking and nutrition (KS1/KS2) will need training (prior to delivering the cooking/food unit) and assessment for Level 2 Food Safety certificate which includes risk assessment guidance and other documentation relating to safe working practices in terms of food hygiene and safety, personal hygiene and safety related directly to classroom practice (accessible via National College).

9. Teaching and Learning

- 9.1** DT lessons are delivered each term for pupils in KS1 and KS2. It is down to the discretion of the class teacher if the lessons are taught in block sessions or weekly. Our intention is to do a project every other half term and in weekly lessons but recognise that this may not always be possible and so a project may be blocked.
- 9.2** The school uses a variety of teaching and learning styles in DT lessons that are matched to the activity and ability of pupils. The main aim of these lessons is to develop pupils' knowledge, skills and understanding.
- 9.3** Teaching and learning styles are adapted to support pupils with SEND to ensure these pupils continue to have their confidence and self-esteem raised.

9.4 Teachers ensure pupils apply their knowledge and understanding when developing ideas, planning and producing work and evaluating these.

9.5 The school uses 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 the ideas of others and treating these with respect.

9.6 Principles for effective teaching include:

- Setting tasks in the context of pupils' prior knowledge – revisiting prior learning.
- Promoting active learning.
- Inspiring, exciting and motivating pupils to know more.

9.7 Strategies for effective teaching include:

- Ensuring the teaching methods used suit the purpose and needs of the pupils.
- Providing a meaningful context and clear purpose when assigning tasks.
- Using focussed practical tasks to help pupils develop and evaluate techniques.
- Ensuring tasks are built on skills and understanding.

9.8 The classroom teacher will work with the subject leader to ensure that the needs of all pupils are met by:

- Setting tasks which can have a variety of creative and innovative responses.
- Providing resources of differing complexity, according to the ability of the pupils.
- Setting tasks of varying difficulty, allowing challenge for all.
- Utilising support staff to ensure that pupils are effectively supported.

9.9 Evidencing Learning

Work can be evidenced through the following:

- Photographs
- Videos
- Displays
- Written work
- Notes; discussion points on post-it notes can be kept in the class floor book.
- School social media page

9.10 Evidencing work is essential as it is a record of individual pupils' experiences and ideas throughout a year and key stage, and will be seen as evidence for assessment and reporting purposes. Each project is to be kept by each child in the form of a booklet.

9.11 Displays

- Displays of work are used to celebrate achievement and support teaching and learning.
- The school promotes displays of work in classrooms and corridors to influence how pupils feel about their environment, promote high expectations and raise self-esteem.
- Displays are used to communicate ideas, stimulate interest, celebrate pupils' work, reflect the ethos of the school and respond to pupils' interests.

10. Planning

10.1 We use Projects on a Page, designed by the Design & Technology association. Planning of the DT curriculum is focussed on creating opportunities for pupils to:

- Work with a design brief and specification
- Carry out focussed practical tasks to allow pupils to explore materials and techniques
- Develop key competencies such as team-work and problem solving
- Learn about and follow health and safety rules
- Think creatively to solve problems
- Record ideas through discussions, drawings and diagrams
- Appreciate and understand the work of great designers and engineers
- Learn how to research and analyse existing products
- Discuss and critically evaluate the work of others
- See that DT is a valued subject, an essential part of life and the future.

- 10.2 The school creates long-term and medium-term plans for the delivery of the DT curriculum – these are as follows:
- Long-term: includes the aspects of DT studied in each term and were created by DATA. (Projects on a Page)
 - Medium-term: includes the details of work studied each term
- 10.3 The **subject leader** is responsible for reviewing and updating long-term and medium-term plans, and communicating these to teachers.
- 10.4 Class teachers are responsible for reviewing and updating, building on the medium-term plans, taking into account pupils' needs and identifying the methods in which topics could be taught.
- 10.5 All relevant staff members are briefed on the school's planning procedures as part of their staff training.
- 10.6 Issues of health and safety are addressed in the planning and delivery of the DT curriculum.
- 10.7 Class teachers will use the key learning content in the DfE's statutory guidance 'Design and Technology programmes of study: key stages 1 and 2'. (The National Curriculum)
- 10.8 Lesson plans will demonstrate a balance of interactive and independent elements used in teaching, ensuring that all pupils engage with their learning.
- 10.9 There will be a clear focus on direct, instructional teaching and interactive oral work with the whole class and targeted groups.
- 10.10 Long-term planning will be used to outline the aspects of DT to be taught within each year group.
- 10.11 Medium-term planning will be used to outline the vocabulary and skills that will be taught in each unit of work, as well as highlight the opportunities for writing and assessment.
- 10.12 Medium-term plans will identify learning objectives, main learning activities and differentiation. Opportunities for revisiting prior learning will also be identified.
- 10.13 Medium-term plans will be shared with the subject leader to ensure there is clear progression between years.
- 10.14 Short-term planning will be used flexibly to reflect the intention of the lesson, the success criteria and the aims of the next lesson.
- 10.15 All lessons will have clear learning intentions, or inquiry questions which are shared and reviewed with pupils.

11. Assessment and Reporting

- 11.1 Pupils will be assessed, and their progression recorded, in line with the school's Assessment Policy.
- 11.2 By the end of each key stage, pupils are expected to know, apply and understand the knowledge, skills and processes specified in the relevant programme of study.
- 11.3 An EYFS profile will be completed for each pupil in the final term of the year in which they reach age five. This will include reporting on characteristics of effective learning.
- 11.4 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'.

- 11.5 The progress and development of pupils within KS1 and KS2 is assessed against the descriptors outlined in the national curriculum.
- 11.6 Throughout the year, teachers will plan on-going assessment opportunities in order to gauge whether pupils have achieved the key learning objectives.
- 11.7 Assessment will be undertaken in various forms, including the following:
- Questioning
 - Discussions
 - Marking work
 - Pupils' self-evaluation of their work
- 11.8 Teachers will also assess pupils through their:
- 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.
- 11.9 Formative assessment, which is carried out informally throughout the year, will be used to identify pupils' understanding of subjects and inform lesson planning.
- 11.10 End-of-year assessments will be passed to relevant members of staff, such as the subject leader and future teachers, in order to demonstrate where pupils are at a given point in time.
- 11.11 Summative assessments are also used at the end of a unit of work. Teachers will make a judgement about the work of each pupil in relation to the national curriculum and record assessments using the school tracking system.
- 11.12 Parents will be provided with a written report about their child's progress during the Summer term every year. This will include information on pupils' attitudes towards DT, their understanding of the design process and knowledge of health and safety within the subject.
- 11.13 Verbal reports will be provided at parents' evenings during the Autumn and Spring terms.
- 11.14 The progress of pupils with SEND will be monitored by the SENCO.

12. Resources

- 12.1 The school has a selection of centrally stored materials, tools and equipment to ensure that all pupils have access to the necessary resources.
- 12.2 The school library contains resources and topic books to support pupils' research.
- 12.3 The subject leader shares appropriate resources, including websites with class teachers.
- 12.4 The DT budget covers the cost of materials and replacement tools. Class teachers are required to maintain the tools and equipment used.
- 12.5 Class teachers are responsible for informing the DT leader if certain equipment is needed a term prior to teaching the project, to give adequate time for resources to be ordered if required.
- 12.6 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.
- 12.7 At the start/end of each school year, the subject leader will work with the head teacher to assess the school's DT tools, materials and equipment to ensure there is sufficient equipment for pupils.

13. Monitoring and Review

- 13.1 The subject leader will monitor DT through learning walks, work samples and pupil voice and report to the headteacher and members of the SLT.
- 13.2 The subject leader will write an action plan at the beginning of each academic year and review the progress at three points: Autumn 2, Spring 2, Summer 2.
- 13.3 The subject leader will produce a report, using evidence from their action plan, which will be shared with Governors.
- 13.4 This policy will be reviewed every two years by the subject leader and headteacher.
- 13.5 Any changes made to this policy will be communicated to all members of staff.
- 13.6 All members of staff directly involved with teaching DT are required to familiarise themselves with this policy.
- 13.7 The next scheduled review date for this policy is January 2024.