Computing Policy

Contents:

1. Statement of Intent

Computing Curriculum:

Computing is concerned with storing, processing and presenting information by electronic means. Pupils need to use Computing in schools:

- to enhance and extend learning
- to gain confidence and the capability to use Computing in later life. (NCC)

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. (Computing POS)

At St Peter's, we believe that Computing 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.

The use of computers and other Computing tools will be incorporated into every curriculum area so that it becomes a working tool in the classroom and that its application arises naturally through classroom activities. It enriches the wider curriculum by providing opportunities for both individual and collaborative learning. Computing is not only a subject in its own right but is also a means of enhancing teaching and learning and proves to be a strong motivator for all children, particularly those with special needs. It may be a tool by which children with emotional, physical or communication difficulties may fulfil their potential.

The purpose of this policy is to:

- ensure appropriate access and equal opportunity for use by all pupils
- ensure continuity and progression in children's learning
- examine teaching and learning strategies
- identify skills, concepts and attitudes to be achieved
- monitor and record pupils' Computing capability
- ensure coherent management and support
- match provision against statutory requirements
- inform staff, governors, parents and other interested parties
- ensure awareness by all of e-safety issues
- provide acceptable user agreements for staff, children and parents before using the school digital learning platform

"Children and young people need to be empowered to keep themselves safe – this isn't just about a top-down approach. Children will be children – pushing boundaries and taking risks. At a public swimming pool we have gates, put up signs, have lifeguards and shallow ends, but we also teach children how to swim."
Dr Tanya Byron, Safer children in a digital world: The report of the Byron Review

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) 'Computing: 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 Computing.
- Reviewing changes to the National Curriculum and advising teachers on the implementation of these.
- Monitoring the learning and teaching of Computing, providing support for staff where necessary.
- Ensuring the continuity and progression from year group to year group.
- Helping to develop colleagues' expertise in Computing.
- Organising the deployment of resources and carrying out an annual audit of all related resources.
- Liaising with teachers across all phases.
- Liaising with the SENDCO about support for pupils with SEND.
- Communicating developments in the teaching of Computing 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 Computing.
- Ensuring common standards are met for recording and assessing pupil performance.
- Advising on the contribution of Computing to other curriculum areas, including cross-curricular links and extra-curricular activities.
- Collating assessment data and setting new priorities for the development of Computing in subsequent years.

3.2   The classroom teacher is responsible for:

- Acting in accordance with this policy.
- Ensuring the progression of pupils' Computing skills, with due regard to the National Curriculum.
- Planning lessons effectively, using the Kapow 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 Computing.
- Evaluating schemes of work and maintaining the resources required to deliver lessons.

3.3 The SENDCO is responsible for:

- Liaising with the subject leader to implement and develop specialist Computing-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 Computing in pupils' learning support plans (LSPs).

- Advising staff on the use of TAs to meet pupils' needs.

4. Curriculum Objectives

Computing is changing the lives of everyone. Through teaching Computing, we equip children to participate in a rapidly-changing world where work and leisure activities are increasingly transformed by technology. We enable them to find, explore, analyse, exchange and present information. We also focus on developing the skills necessary for children to be able to use information in a discriminating and effective way. Computing skills are a major factor in enabling children to be confident, creative and independent learners.

4.1 The Computing Curriculum will allow pupils to:

- Develop Computing capability in finding, selecting and using information;

- Use Computing for effective and appropriate communication;

- Monitor and control events both real and imaginary;

- Apply hardware and software to creative and appropriate uses of information;

- Apply their Computing skills and knowledge to their learning in other areas;

- Use their Computing skills to develop their language and communication skills;

- Explore their attitudes towards Computing and its value to them and society in general. For example, to learn about issues of security, confidentiality and accuracy.

- Use Computing to access the global community and develop an awareness of world citizenship;

4.2 Teaching and Learning styles

As the aims of Computing are to equip children with the skills necessary to use technology to become independent learners, the teaching style that we adopt is as active and practical as possible. We do give children direct instruction on how to use hardware or software to enable them to use the computers effectively when studying other aspects of the curriculum.

The main emphasis of our teaching in Computing is for individuals or groups of children to use computers to help them in whatever they are trying to study and share and present information about the world. So, for example, children might research a history topic by using an app, or they might investigate a particular issue on the Internet. Children who are learning science might use the computer to model a problem or to analyse data. We encourage the children to explore ways in which

the use of Computing can improve their results, for example, how a piece of writing can be edited or how the presentation of a piece of work can be improved by moving text or editing an image etc.

We recognise that all classes have children with widely differing Computing abilities. This is especially true when some children have access to Computing equipment at home, while others do not. We provide suitable learning opportunities for all children by matching the challenge of the task to the ability and experience of the child. We achieve this in a variety of ways, by:

- Setting common tasks which are open-ended and can have a variety of responses;
- Setting tasks of increasing difficulty (not all children complete all tasks);
- Grouping children by ability in the room and setting different tasks for each ability group;
- Providing resources of different complexity that are matched to the ability of the child;
- Using classroom assistants, when available, to support the work of individual children or groups of children.

5. Subject Content

5.1   Foundation Stage:

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

All Computing 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 Computing curriculum in EYFS focuses on the specific areas of making things happen and sharing their ideas creatively.

Pupils will be taught to:

- Safely and appropriately use and explore a variety of apps and software to make things happen virtually on screen or with physical devices such as robots.

- Represent their own feelings through art, as well as music, dance, role play, storytelling and computing apps and software.

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.

- 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.]

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, pupils 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.

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 Computing curriculum is differentiated for these pupils, in line with the school's **SEND Policy**.

6.3 The planning and organising of teaching strategies for Computing will be reviewed on a **termly** basis by the **subject leader** to ensure that no pupil is at a disadvantage.

6.4 The school aims to maximise the use and benefits of Computing as one of many resources to enable all pupils to achieve their full potential.

7. Cross Curricular Opportunities

7.1   English:
Computing 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 record verbal descriptions and explanations.

Computing enhances English through **writing** by:

- Providing opportunities for pupils to write for real purposes and audiences.
- Using software that supports sequencing of ideas and writing of instructions.
- Organizing non-chronological writing.
- Supporting writing in different fiction genres.
- Creating games and quizzes that develop understanding of spelling and grammar.

7.2   Mathematics:
Computing enhances **Mathematics** by giving pupils opportunities to:

- Use apps and software to support directional language: describe position, direction and movement.
- Use coding to understand a wide range of mathematical concepts such as rotation, greater, less than and equal to, angles, random numbers, variables and logic gates such as AND/OR.
- Use apps and software to develop understanding of appropriate standard and non-standard measures.
- Create graphs and charts and develop vocabulary such as axis, range and frequency
- Recognise and name common 2-D and 3-D shapes.
- Draw and use virtual 2-D and 3-D shapes
- Create and explore nets of shapes; make 3-D shapes using apps and software.
- 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   Design and Technology
Computing enhances **Design and Technology** 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:
Computing enhances **Art and Design** by giving pupils opportunities to:

- Use apps to explore colour, pattern, line, shape and texture.
- Use apps to develop drawing skills when designing.
- Recording

7.5   Geography:
Computing 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:
Computing 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 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:
Computing 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 Computing.

8. Health and Safety

8.1   Pupils are allowed access to a wide range of devices in Computing, to maximise their learning experience; however, health and safety concerns should always be considered, including time spent on devices, and the appropriate use of equipment.

8.2   In the light of current COVID guidance, devices and equipment will need to be cleaned regularly between uses.

8.3   Pupils will be taught to use devices and equipment properly by the <u>classroom teacher</u> before use. They will also be fully briefed on the importance of how to correctly use them.

9. Teaching and Learning

9.1   In addition to section 4.2 Teaching and Learning Styles…

9.2   Some computing teaching may be taught discretely, such as coding, but we will always look for cross-curricular opportunities to utilise this. Most computing skills in digital literacy or information technology can be integrated into other lessons. When teaching a science lesson, you will introduce a simulation; when teaching maths you will use digital graph-making software to help them create a graph and interpret data; when writing a recount in English you will use a software package that allows the pupils to sequence or organise their ideas appropriately (at St Peter's we use Microsoft Office programmes).

9.3   Computing lessons are delivered each week for pupils in KS1 and KS2. In EYFS, children access Computing activities and challenges in the continuous provision and have additional, focussed Computing lessons each half term. EYFS also access the Kapow SOW from Autumn Term 2.

9.4   Teaching and learning styles are adapted to support pupils with SEND to ensure these pupils continue to have their confidence and self-esteem raised.

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

9.6   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.

9.7   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.

9.8   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.

9.9 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.

9.10 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
- Saved electronically in children's folders

9.11 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.

9.12 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 Planning of the Computing curriculum is focussed on creating opportunities for pupils to:
- Work with a design brief and specification
- Carry out focus practical tasks to allow pupils to explore materials and techniques.
- Develop key competencies such as teamwork 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 Computing is a valued subject, an essential part of life and the future.

10.2 St Peter's has adopted the Kapow SOW which provides progression of skills and challenge for our children. In our initial year (2024-25), we will follow the Transitioning to Kapow document before moving to the full version of Kapow in 2025-26.

10.3 Teachers can change the order in which units are delivered to best suit their class and other units of work to be covered. This allows for cross curricular teaching to take place.

10.4 Class teachers are responsible for reviewing and updating lesson 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 Computing curriculum.

10.7 Class teachers will use the key learning content in the DfE's statutory guidance 'Computing 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 Computing to be taught within each year group.

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 POS.

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.

11.13   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 Computing 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 Computing 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   At the start/end of each school year, the subject leader will work with the head teacher to assess the school's Computing tools, materials and equipment to ensure there is sufficient equipment for pupils.

13. Monitoring and Review

13.1   The subject leader will monitor Computing 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   This policy will be reviewed every two years by the subject leader and Headteacher.

13.4   Any changes made to this policy will be communicated to all members of staff.

13.5   All members of staff directly involved with teaching Computing are required to familiarise themselves with this policy.

13.6   The next scheduled review date for this policy is **October 2026.**