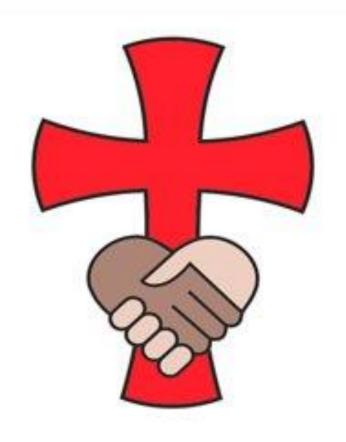# St Matthew's C of E Primary School

Computing Policy

Introduction

At St Matthew's Church of England Primary School, we are committed to providing all children with equal opportunities to enable their light shine in computing. We explicitly teach pupils the skills and knowledge they need to become creative, digitally literate and computational thinkers. This policy sets out a framework within which teaching and non-teaching staff can work, and gives guidance on the planning, teaching and assessment of computing.

The use of digital technology, especially computers and computer systems, is an integral part of the national curriculum and knowing how they work is a key life skill. In an increasingly digital world, we recognise the importance of providing an ambitious, research-informed computing education with a structured, progressive approach to the teaching of computing systems and networks, creative media, programming and data and information. At St Matthew's, we believe that pupils are entitled to high quality technology therefore our resources support more than just the demands of the curriculum and facilitate interactive and collaborative learning opportunities.

As a school, we encourage children not to hide their light and instead to let it shine. We therefore celebrate and recognise their successes in computing and appoint pupils with a keen interest in the subject as digital leaders. These children support other pupils and members of staff with computing needs, such as: keeping computing resources organised, helping their peers in lesson and raising awareness of e-safety practices.

Aims and Objectives

The overall aim for computing at St Matthew's, is for pupils to become computer scientists and be digitally literate by the time they start secondary school. Throughout our teaching of computing, we aim to develop pupils who:

- Are responsible, competent, confident and creative users of information and communication technology.
- Know how to keep themselves safe whilst using technology and be able to minimise risk to themselves and others.
- Can comprehend, design, create and evaluate algorithms.
- Can create software to allow computers to solve problems.
- Know how networks can be used to retrieve and share information, and how they come with associated risks.
- Understand what a computer is, and how its constituent parts function together as a whole.
- Can select and create a range of media including text, images, sounds and video.
- Understand how data is stored, organised and used to represent real-world artefacts and scenarios.

- Understand the activities involved in planning, creating and evaluating computing artefacts.
- Can use software tools to support computing work.
- Understand how individuals, systems, and society as a whole interact with computer systems.

The national curriculum for computing aims to ensure that all pupils:

- Can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- Can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- Can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- Are responsible, competent, confident and creative users of information and communication technology.

Curriculum

EYFS

At St Matthew's, the computing curriculum in EYFS is integrated across the seven areas of learning to build foundational digital literacy, problem-solving, and e-safety skills. Children learn to use technology purposefully, take digital photos, and understand that information can be found on computers, preparing them for Key Stage 1.

Computing concepts are woven into daily learning through both adult-led and child-initiated activities with the aim being to introduce children to technology and develop fundamental digital literacy, encouraging exploration and understanding of how technology works. Computing activities often relate to other areas of the EYFS framework, such as using technology to record work in Expressive Arts and Design or exploring cause and effect in Understanding the World.

Key Stage 1

During their time in Key Stage 1, pupils have access to a modern computing suite which is equipped with 30 desktop computers, allowing each child to gain confidence with using a keyboard and mouse and developing hand-eye coordination.

Pupils learn how to become digitally literate. They achieve this by learning about how to use a range of different digital devices safely and why it is important to keep information private. In computing lessons, they learn about online safety and what this entails. Additionally, pupils learn about who to speak to if they are concerned about something they have read, seen or heard online.

Children develop their computer science skills by learning about what algorithms and programs are and how to write them. Children learn about the importance of step by step instructions to achieve a required outcome. Pupils also learn how to predict a programs outcome and debug a program.

Children develop their understanding of information technology by creating media, such as digital painting, photography, writing and music. They also gain an understanding of how technology can be used for data and information, such as creating pictograms and grouping data. They further their understanding by learning about the purposes of a range of technology and why some technology is used for certain tasks.

Key Stage 2

During their time in Key Stage 2, pupils progress to using laptops in their computing lessons, enabling children to also develop confidence with touchpads. This ensures that by the time they have left for secondary school, the pupils have been exposed to a wide range of computing devices and are able to use them competently.

Pupils continue to develop their knowledge and skills to become more digitally literate. Throughout the key stage, the children learn about what behaviours are acceptable and unacceptable online and the risks associated with these. Additionally, they have opportunities to discuss what they have seen on the internet and evaluate how accurate and authentic the information is that they find online. Pupils also learn about how networks and systems work and how we can communicate using technology.

Children extend their knowledge of computer science skills by using their knowledge and understanding of algorithms to explore variables, loops, inputs and events. They continue to extend their prediction and debugging skills when reflecting upon their programs. By the end of the key stage, they have used both block-based and text-based programming languages.

Pupils extend their knowledge of information technology by creating media such as stop frame animations, documents, edited photographs, vector graphics, 3D models, podcasts, edited videos and webpages. They also further their understanding of how technology can be used for data and information, such as creating branching databases, flat-file databases and spreadsheets. They also learn how to collect data using data loggers.

Teaching and learning

At St Matthew's, computing teaching focuses on enabling children to think as computer scientists. Our principal aim is to develop the children's knowledge, skills and understanding in computing and we use a variety of teaching and learning styles

to deliver effective lessons to our pupils. We follow the National Centre for Computing Education's pedagogical approach to achieve this.

This approach consists of twelve key principles that are underpinned by research. Each principle has been shown to contribute to effective teaching and learning in computing. These principles are:

- Lead with concepts
- Work together
- Get hands-on
- Unplug, unpack, repack
- Model everything
- Foster program comprehension
- Create projects
- Add variety
- Challenge misconceptions
- Make concrete
- Structure lessons
- Read and explore code first

Computing curriculum planning

At St Matthew's, the curriculum is implemented through the use of the NCCE's Teach Computing scheme of work. One computing unit is taught per half-term so a total of six units are taught in an academic year. A range of key concepts are explored through this scheme and each computing unit covers a key concept. These concepts include:

- Computing systems and networks
- Programming
- Data and information
- Creating media

The units are based on a spiral curriculum, therefore each of the key concepts are revisited regularly (at least once in each year group) and each new unit consolidates and builds upon prior learning. By designing the curriculum in this way, retention of key computing knowledge is improved as topics are revisited yearly at the minimum. It also ensures that connections across the units are made as children progress through the years and key stages at school.

As a school, we believe in meeting the needs of our children and ensuring our curriculum is child-centred. Therefore, we adapt the NCCE's framework by creating our own online activities on a platform called 'Seesaw' where relevant. We understand that not all pupils have the same access to devices at home, so wish for the children to be using computers as much as possible in order to become more digitally literate and best prepare them for the future.

Cross-curriculum learning

Teaching staff are encouraged to use digital devices in lessons other than computing. There are sets of tablets in both buildings that can be used for video recording/editing, researching and augmented reality. Both sets of tablets have the software installed that is required for these purposes. Teaching staff also have access to virtual reality goggles intended for education, which have readily-made resources for the Early Years Foundation Stage, Science, Geography, History, Mathematics and more. Staff members have received training on how to use these and have their own accounts to plan and resource virtual reality lessons.

Assessment

At St Matthew's C of E Primary School, assessment is an integral part of the teaching process. From Key Stage 1, children's work is saved and evidenced on a platform called 'Seesaw', which is reviewed weekly by teaching staff. This allows teaching staff to reflect upon each individual's computing work and form teacher judgements.

From Key Stage 2, pupils are also assessed on a half-termly basis using NCCE's electronic assessments in order to gage their understanding of each computing unit. Each question included in the electronic assessment links to a relevant national curriculum objective. These assessments take place in the penultimate computing lesson to ensure time is given to address any misconceptions before moving onto the next unit.

Monitoring

Monitoring takes place regularly through pupil discussions, the sampling of children's work on 'Seesaw', discussions with teachers, learning walks and lesson observations.

Resources

We believe that pupils should have access to a wide range of modern technology to help them progress as computer scientists.

In the Key Stage 1 building, children have access to tablets, which can be used for both computing and cross-curricular learning, as well as a modern computing suite with enough desktop computers for each child in a class. The Key Stage 1 building is also supplied with Bee-Bots and mats for programming lessons. All of the devices in the Key Stage 1 building that are intended for computing have the necessary software installed on them. They are regularly maintained by members of IT staff.

The Key Stage 2 building is resourced with laptops intended for computing use only, which are shared across the site on a timetable. This ensures that they stay in good condition and are well-maintained. All of these laptops have the software required for computing lessons installed on them and they are regularly checked by members of IT staff.

Further to this, the Key Stage 2 building is also equipped with enough Micro:bits for each individual child in a class and enough Crumble kits for small group work. In the Key Stage 2 building, there is also a set of thirty tablets that are shared across the site and these can be used for both computing and cross-curricular learning. Key Stage 2 pupils also have access to data loggers in school and there are enough to facilitate small group work.

St Matthew's C of E Primary School also has access to a set of VR goggles intended for cross-curricular learning. These are booked out on a calendar and are available to both buildings.

Equal Opportunities, Inclusion & Differentiation

All children regardless of race, culture, religion, social background, gender or academic ability, have equal access to computing in order to develop their skill using computers and other related technology. We carefully plan, monitor and assess to ensure all of our pupils feel valued and have the opportunity to shine. Computing lessons and activities may be adapted to take into account individual requirements. Learning is challenging, yet achievable by all children, whatever their abilities and differentiation is achieved by adapting the tasks, resources or level of support. The school is aware that not all pupils have the same access to computers at home and this is considered in the resourcing and delivery of the curriculum. We aim to teach children to uphold where applicable, British Values and a mutual respect and tolerance of those with different faiths and beliefs.

This policy will be reviewed every two years.

Date: October 2025
Next Review Date: October 2027