St Peter's C.E. Primary School

Computing Policy

Date of policy: Sept 2020

Christian Vision

As a Christian family at St Peter's School, we create a unique place of learning, nurturing the gifts that God in his awesomeness has given us. We encourage every child and prepare them for life's journey, inspiring them to fulfil their potential, their dreams and their aspirations.

'Sowing the seeds of tomorrow.'

Matthew 13:1 - 23

Why Computing?

Computing has an increasingly significant impact on all aspects of modern living. We aim to ensure that the pupils at St. Peter's CE Primary School receive a high-quality computing education which will equip pupils to understand the world through logical thinking and creativity, including making links with mathematics, science, and design and technology. By following the progression of skills, our children will be able to use a variety of technology confidently and effectively, in addition to creating simple computer programmes. Their knowledge and skills will be reinforced across other areas of the curriculum.

The core of computing is computer science, in which pupils are taught the principles of information and computation, and how digital systems work. Computing equips pupils to use information technology to create programs, systems and a range of media. It also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

Aims & Objectives

The National Curriculum's programme of study 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
- become responsible, competent, confident and creative users of information and communication technology.

Information and communication technology is a term used to cover a range of equipment and systems which use information sources to analyse, process and present information, and to model, measure and control external events. At St. Peter's CE Primary School this includes interactive whiteboards, audio recorders, iPads, laptops, microscopes, controllable robots and cars, along with online content.

Role of the Lead Teacher

The role of the lead teacher for Computing within St Peter's CE Primary School includes the following elements:

- Supporting staff in the delivery of Computing across the school
- Auditing and fulfilling staff professional development requirements
- Auditing school resources, organising and replacing as necessary
- Reviewing and updating the Computing documentation policy
- Monitoring the delivery of Computing within school
- Updating and reviewing, whilst supporting and promoting online-safety for all pupils
- Monitoring changes and developments in apps/devices which primary children may have access to at home or in school
- promoting parental responsibility regarding online safety.

Online safety measures and responsibilities.

Teaching and Support Staff are responsible for ensuring that:

• they have an up to date awareness of online-safety matters and of the current school online-safety policy and practices

• they have read, understood and signed this computing policy and other relevant policies (Use of social media policy and online-safety policy)

• they report any suspected misuse or problem to the Headteacher/online-safety Coordinator for investigation, action or sanction

• all digital communications with pupils / parents / carers should be on a professional level and only carried out using official school systems

• online-safety issues are embedded in all aspects of the curriculum, lessons and other activities

• pupils understand and follow the online-safety and acceptable use policies

• pupils have a good understanding of research skills and the need to avoid plagiarism and uphold copyright regulations

• they monitor the use of digital technologies, mobile devices etc., in lessons and other school activities (where allowed) and implement current policies with regard to these devices

• in lessons where internet use is pre-planned, pupils should be guided to sites checked as suitable for their use and that processes are in place for dealing with any unsuitable material that is found in internet searches. Pupils should always be reminded of safety procedures to use before commencing any ICT lessons

Child Protection / Safeguarding Designated Person: is trained in online-safety issues and be aware of the potential for serious child protection / safeguarding issues to arise from:

• sharing of personal data

• access to illegal / inappropriate materials

• inappropriate on-line contact with adults/strangers potential or actual incidents of grooming

• cyber-bullying

. sexting

Pupils:

• are responsible for using the school digital technology systems in accordance with the Student / Pupil Acceptable Use Policy

• have a good understanding of research skills and the need to avoid plagiarism and uphold copyright regulations
• need to understand the importance of reporting abuse, misuse or access to inappropriate materials and know how to do so
• will be expected to know and understand policies on the use of mobile devices and digital cameras. They should also know and understand policies on the taking / use of images and on cyber-bullying.
• should understand the importance of adopting good online-safety practice when using digital technologies out of school and realise that the school's Online-Safety Policy covers their actions out of school, if related to their membership of the school.

Teaching and learning style

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. At times we do give children direct instruction on how to use hardware or software in 'skills' lessons but we often use Computing capabilities to support teaching across the curriculum. So, for example, children might research a history topic by looking on the internet. Children who are learning science might use computer simulations 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 about etc

Computing Curriculum Planning

Computing will be either integrated into all other subjects at appropriate stages, to enhance other learning or taught as a 'stand alone' unit of work. In addition we will aim to promote the skills and knowledge of Computing as a subject in its own right. Computing capability will be delivered through a scheme of work based on the New National Curriculum (2014). A key skills grid, identifying the key skills to be taught and revisited in each area of Computing in key stage 1 and 2 can be incorporated into discrete Computing plans and/or throughout the creative curriculum planning. The areas of capability in Computing taught at St Peter's are:

- Computer Science (programming, control and simulations)
- Presenting ideas an expressing creativity through digital technology
- Finding, storing and organising and interpreting information
- Communicating experiences

Opportunities for the use of Computing are identified in planning for the Foundation Stage, including role play opportunities.

Objectives

Early years

It is important in the foundation stage to give children a broad, play-based experience of IT and computing in a range of contexts, including off-computer activities and outdoor play.

Computing is not just about computers. Early years learning environments should feature IT

scenarios based on experience in the real world, such as in role play. Children gain confidence, control and language skills through opportunities such as 'programming' each other using directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys. Unplugged activities are included throughout all year groups.

Outdoor exploration is an important aspect and using digital recording devices such as video recorders, iPads, cameras and microphones can support children in developing communication skills. This is particularly beneficial for children who have English as an additional language.

By the end of key stage 1 pupils should be taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions
- write and test simple programs
- use logical reasoning to predict the behaviour of simple programs
- organise, store, manipulate and retrieve data in a range of digital formats
- Communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

By the end of key stage 2 pupils should be taught to:

- design and write programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output; generate appropriate inputs and predicted outputs to test programs
- use logical reasoning to explain how a simple algorithm works and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world-wide web; and the opportunities they offer for communication and collaboration
- describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely
- Select, use and combine a variety of software (including internet services) on a range of digital devices to accomplish given goals, including collecting, analysing, evaluating and presenting data and information.

Other curriculum links

Computing contributes to teaching and learning in all curriculum areas. For example, graphics work links closely with work in art, and work using databases supports work in mathematics, while the Internet proves very useful for research in humanities subjects. Computing enables children to present their information and conclusions in the most appropriate way.

- **English**

Computing is a major contributor to the teaching of English. Through the development of keyboard skills and the use of computers, children learn how to edit and revise text. They have the opportunity to develop their writing skills by communicating with their peers over the Internet. They learn how to improve the presentation of their work by using desk-top publishing software.

- **Mathematics**

Many Computing activities build upon the mathematical skills of the children. Children use Computing in mathematics to collect data, make predictions, analyse results, and present information graphically. They also acquire measuring techniques involving positive and negative numbers, and including decimal places.

- **Personal, social and health education (PSHE) and citizenship**

Computing makes a contribution to the teaching of PSHE and citizenship as children learn to work together in a collaborative manner. They develop a sense of global citizenship by using the internet and messaging. Through the discussion of moral issues related to electronic communication and social media, children develop a view about the use and misuse of computing, and they also gain a knowledge and understanding of the interdependence of people around the world. This also brings to the fore the need for our children to be aware of the positives and negative sides to computing, especially as phones, tablets and many home devices allow unfiltered access to the world wide web.

Teaching Computing to children with Special Educational Needs

At our school, we teach computing to all children, whatever their ability. Computing forms part of our school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. In some instances, the use of Computing has a considerable impact on the quality of work that children produce; it increases their confidence and motivation. When planning work in computing, we can take into account the targets in the children's Records of Progress (ROPs).

Assessment and recording

Formative assessment is used by teachers to identify each child's progress, determine what each child has learned and what should be the next stage in his/her learning. In addition to this, assessment of Computing capability takes place at the end of each unit and is based on children's work, evaluations and explanations where appropriate, and teacher assessment. Evidence of work is kept in individual pupil electronic folders. This will form the basis of the end of year report to parents. The subject leader is responsible for monitoring the standard of the children's work and the quality of teaching in line with the schools monitoring cycle. This may be through lesson observations, pupil discussion and evaluating pupil work.

Resources

An audit of both software and hardware is maintained by the Headteacher and the out-sourced IT technicians. Colleagues are informed when new resources are purchased and the necessary staff development is put into place to ensure they are used effectively. Training is given to staff on new equipment through INSETs, CPD or Staff Meetings

The school management team and subject leader are responsible for ensuring that a workable hardware replacement plan is in place and that equipment in need of repair is identified and the appropriate repairs or replacements carried out.

Monitoring and review

The policy will be reviewed by the Computing subject leader every three years in consultation with the Headteacher, staff and the Link Governor. The online-safety Policy, Use of social media policy, Computing scheme and assessment procedures will be reviewed and adapted to keep pace with current curriculum developments and developments within technology.

The governing body will review this policy every three years. However, it may be reviewed earlier if new government regulations are introduced, or if the governing body receives recommendations on how the policy might be improved.

Signed: (Computing Subject Leader) **Date:** Sept 2020

Review due: April 2023