

St John's Upper Holloway CE Primary School



Computing policy

November 2020

Policy for Computing

Approved by staff and governors November 2020

Review: November 2022

Our Vision

Jesus said: 'Love each other as I have loved you'. John 15:12

As we are loved, so we shall love.

As we are taught, so we shall teach.

As we are nurtured, so we shall flourish.

Our Mission

St John's is a small, caring Church of England Primary School. It is committed to supporting our pupils to be happy, successful and fulfilled throughout their lives. We believe that everyone is unique and valued by God. We aspire to be a high achieving school that provides an outstanding education:

- ❖ promoting the highest standards of teaching and learning, with excellent leadership
- ❖ being inclusive, celebrating diversity and valuing all religions, faiths, cultures and backgrounds
- ❖ providing a rich and stimulating curriculum that will inspire and challenge
- ❖ being a happy, healthy and safe place
- ❖ providing excellent care, guidance and support with a strong partnership between school, parents and the community.

We seek to promote six Christian values of creativity, thankfulness, truthfulness, friendship, perseverance and courage, each linked by our core value of love. We believe these help to prepare our children for a successful and fulfilling life, so being:

- ❖ considerate and respectful with excellent manners
- ❖ confident, happy, independent and self-motivated
- ❖ co-operative and collaborative
- ❖ honest and trustworthy
- ❖ resilient, hardworking and determined
- ❖ highly principled with moral, spiritual, cultural and social awareness, including shared British Values.

COMPUTING POLICY

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1 Aims

Technology is a vital part of everyday life which has impacted the leisure and work activities of the children and their families. Through computing, we aim to prepare the children for a future shaped by technology.

At the core of the curriculum is computational thinking and computer science where children are taught how to use digital systems and put this to use through programming. We ensure children become digitally literate and that they can participate effectively and safely in this digital world. They use and express themselves and develop ideas through information and communication technologies. We want children to be active participants in the digital world.

The national curriculum for computing ensures children:

- 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
- they are responsible, competent, confident and creative users of information and communication technology

As part of information technology, children learn that technology is everywhere and they develop an understanding of how it works. Children use and present their information, develop their ideas and communicate this through a range of strategies, for example writing and presenting, exploring art and design, using multimedia. They learn to store and find their work and how to edit and improve. Information technology has been used across the wider curriculum making meaningful links to their learning.

Within digital literacy, children learn to use technology safely and how their online behaviour impacts others. They develop practical skills in the safe use of ICT such as protecting personal information and what to do if something goes wrong. Children will have the opportunity to apply these skills to solve relevant, worthwhile problems for example through the use of email, blogging and networks. We take

part in safer internet week each year and children prepare and present an online safety assembly and all children learn and understand the “SMART” rules.

In computer science we teach children to understand and apply the principles and concepts of computer science, including abstraction, logic, algorithms and data representation. The children will develop an understanding of the vocabulary associated with coding and computer science. They will have repeated practical experience of writing computer programs and algorithms, fix problems (debug) and evaluate to decide the most efficient or effective. Our coding club offers further opportunities to practise and apply these skills.

2 Planning

At St John’s C of E School we use Purple Mash and the Islington Online Safety curriculum as the primary resources for planning supported by other resources as appropriate. We adapt these schemes to the needs of individuals, groups and classes of children.

Computing is taught in discrete lessons and where appropriate meaningful cross-curricular links are made.

The learning in computing builds sequentially on prior learning and are based on the national curriculum programme of study. The school uses Purple Mash and Islington Online Safety schemes as the basis for its curriculum planning from Year 1 to Year 6. This is a comprehensive resource and allows us to build upon learning year by year and is sequenced to maximize learning. The learning that is to take place within each computing unit, as well as the core vocabulary and assessments that will be undertaken, are clearly set out in ‘knowledge organisers’ and these are used by both the pupils and teachers to help them reflect on their learning as the unit progresses.

Long Term Planning

The Long-term curriculum overview maps for each year group outline the units to be covered during each term. Units are arranged to ensure breadth and balance of the content areas across both key stages and for meaningful cross curricular planning to take place. These plans are reviewed and updated yearly.

Medium Term Planning

- Medium term plans include key objectives for each unit.
- They also include opportunities for assessment activities, displays, trips and links to previous work when applicable.
- The subject leader is responsible for keeping and reviewing these plans.

Short Term Planning

- Weekly computing plans provide more detail about each lesson, including the main activity, key resources and assessment.
- The class teacher is responsible using and adapting the short-term plans provided within the scheme. The class teacher keeps these individual plans in their planning folder on the schools ‘P drive’ and s/he and the ICT subject leader often discuss them on an informal basis.

3 Teaching and Learning

A variety of teaching styles are used to teach computing. The main focus is to provide practical activities that enable the children to develop their knowledge, understanding and skills through first-hand experience.

This will involve:

- Reviewing prior learning and recapping on how the learning for each lesson
- Whole class teaching activity linked to the learning objective and steps to success
- Discussion between pupils and teacher.
- Carrying out practical online and off line activities.
- Using a range of digital media such as iPads, iPods, Chromebooks, beebots, and everyday technology such as torches, remote control cars and cameras.

Because we know our children have a wide range of abilities and needs. This is especially true when some children have access to technology at home, while others do not. We ensure that we provide suitable learning opportunities for all, by:

- Setting common tasks which are open ended and can have a variety of responses.
- Setting tasks of increasing difficulty.
- Grouping children in a way that will enhance learning opportunities. This may not be based on their ability to work collaboratively and provide mutual support for each other.
- Using teaching assistants to support and extend the work of individual children or groups of children.
- Where appropriate, planning lessons with support teachers to support children with SEND (Special Education Needs and Disabilities) or who speak English as an additional language (EAL).

At the end of each lesson children should be given the opportunity and support to reflect on their own learning in relation to the LO and steps to success.

4 Teaching in the Early Years Foundation Stage

Computing is covered in the EYFS by the “Technology” strand of “Understanding the World”, one of the seven curriculum areas. We aim to provide an ‘enabling environment’ that will enable children to learn through play and exploration. Such provision will also provide opportunities for children to develop their characteristics of effective learning ie

- **playing and exploring** - children investigate and experience things, and ‘have a go’
- **active learning** - children concentrate and keep on trying if they encounter difficulties, and enjoy achievements
- **creating and thinking critically** - children have and develop their own ideas, make links between ideas, and develop strategies for doing things

Children may explore technology independently, for example; by playing with torches, remote control cars and sound buttons. Children also have the opportunity to use iPads and iPods to play apps and learning resources. Adult-led computing-based activities could include using ‘Beebots’ and looking at the parts of an old computer or technology. The use of technology at home and the wider community is identified and talked about during role play and child-initiated play.

We teach computing in Nursery and Reception classes as an integral part of the topic work covered during the year. As these classes are part of the Foundation Stage of the National Curriculum, we relate the computing aspects of the children’s work to the objectives set out in

Development Matters and the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five.

5 Computing and Inclusion

At St John's we teach computing to all children, considering their ability and individual needs. Computing forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our computing teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with SEND (special educational needs), those with disabilities, those with special gifts and talents, and those learning English as an additional language.

When attainment falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that we can take some additional or different action to remove or limit possible barriers to learning (for example, a lot of software can be differently configured for different ability ranges) This ensures that our teaching is matched to the child's needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.

Children with the greatest barriers to learning ie those with an education and health care plan (EHCP) should still have access to the computing unit being studied. This requires the class teacher and 1:1 teaching assistant to plan activities carefully that will match the cognitive ability of that child. Assessments should also be undertaken to inform their progress in relation to the goals from their EHCP as well as subject specific goals.

We enable all pupils to have access to the full range of activities involved in learning computing. Where children are to participate in activities outside the classroom (a trip to a 'Three' for example) we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

6 Assessment

Computing is assessed at the end of each lesson and at the end of each unit.

Computing is assessed using the new National Curriculum guidelines and the Purple Mash assessment criteria. This will identify whether pupils have met the objectives of each unit, are working towards them or have exceeded them. We use the knowledge organisers in each pupil's computing file to highlight the extent to which the objective has been achieved. This judgement is based on on-going evaluations within each lesson as well as end of unit assessments. Teachers can use a whole class grid to RAG rate each objective during lessons. End of unit data is recorded on the Assessment tracking document.

Computing will be reported on at termly parent meetings and formally at the end of each academic year (in report form).

Ongoing assessment to inform day to day teaching and learning will be undertaken by the teacher in the following ways:

Observation and Discussion

Teachers will observe children completing their activities and will discuss how and why they completed these tasks in that manner. These are conducted informally and are used to inform future planning.

Student Portfolios

Teachers will evaluate the end product of each lesson by looking at their online portfolio or the off line activity. This may explain how a child approached the task and if they have displayed any specific skills or progress. They also act as a teaching device to inform the teacher where the gaps are in each child's progress, and help to assess where a child is in relation to national curriculum objectives.

Children are given a summative assessment at the end of each Key Stage and children are assessed against:

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 precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

Key stage 2

Pupils should be taught to:

- design, write and debug 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
- use logical reasoning to explain how some simple algorithms work 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

7 Cross-curricular links

The teaching of computing contributes to teaching and learning in all curriculum areas. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. For example, graphics work links in closely with work in art, while role-play simulations and the Internet prove very useful for research in humanities subjects. ICT enables children to present their information and conclusions in the most appropriate way. Quite a lot of software is generic, and can therefore be used in several curriculum areas.

English

Computing contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The children develop reading and writing skills while researching and presenting their learning. They have the opportunity to develop their writing skills by communicating with people via e-mail and publishing their learning using a range of software. Children develop oral skills in computing lessons through explaining their learning and while using devices to present their work, such as videos and green screen activities. As the children develop mouse and keyboard skills, they learn how to edit and revise text on a computer. In addition a variety of software which targets specific reading, grammar and spelling skills is used across the school.

Mathematics

Computing contributes to the teaching of mathematics. Children use computing in mathematics to collect data, make predictions, analyse results, and present information graphically. Programming allows pupils to give exact instructions for a particular route, or to use their knowledge of angles to draw a range of polygons and when coding they demonstrate the skills needed for Mathematical problem solving and reasoning. We also use our computing devices to support learning in maths through the use of Maths apps and games, such as TTR and Doodle.

Science

Software is used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Data loggers are used to assist in the collection of data and in producing tables and graphs.

Personal, social and health education (PSHE+C) and citizenship

Computing makes a significant contribution to the teaching of PSHE and citizenship. A core part of computing education is knowing how to stay safe online and how to respond appropriately to cyber bullying. The schools online-safety policy sets out in detail how we do this as a school. Through discussion of safety and other issues related to electronic communication, the children develop their own view about the use and misuse of ICT, and they also gain an insight into the interdependence of ICT users around the world. Children in computing classes also learn to work together in a collaborative manner. They also develop a sense of global citizenship by using the Internet and blogging.

Spiritual, moral, social and cultural development

8 Resources

Computing resources can be located in the following places:

- iPads/ Chromebooks– stored in the secure trollies in the hall
- Data loggers, Beebots and other computing devices– stored in the learning room between Year 5 and 6
- Online planning resources (Purple Mash) – each teacher has a log in to access all planning and linked resources
- Islington Online Safety Scheme- saved on the 'P drive'
- Software is installed on computers and apps installed on iPads.

Along with desktop and laptop computers, the school has the following:

Hardware

- network, including switch, router and server PC;
- wireless network points across the school
- network shared resources, including printers;
- interactive whiteboards and screen projection equipment;
- digital stills and video cameras;
- data logger and sensors;
- digital sound recorder;
- calculators;
- floor robot;
- headphones and microphones;
- keyboard (musical).

Software

- word-processing and desktop-publishing programs;
- painting and drawing software;
- multimedia presentation program;
- spreadsheet and database programs;
- simulations;
- virus protection.

Online material

- online content subscriptions;
- school website;
- school e-mail accounts.

We employ a technician to keep our equipment in good working order (Platinum IT). Members of staff report faults online (<https://support.platinum-it.org.uk>). The technician will also set up new equipment, and install software and peripherals.

The computing subject leader has an inventory of all equipment held in the school and this can be found in the subject leader file. Teachers should inform the computing subject leader if equipment is damaged,

depleted or needs replacing. Teachers can also request additional software resources should they need to and the computing budget is managed to enable this.

9 Monitoring and review

The Headteacher, Deputy Headteacher and the computing subject leader will monitor the effectiveness of the policy.

Approved by staff _____ (head) on _____

Approved by Governors _____ (chair of C&S committee) on _____

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