



# St Paul's Church of England Primary School

## ICT & Computing Policy

**Adopted by:** Curriculum and Achievement Committee

**On:** Wednesday 21<sup>st</sup> October 2015

**Review:** Autumn 2018

### 1. Introduction

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing 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.

*(National Curriculum September 2013)*

### 2. Aims of the policy

#### **Caring for all; growing with God**

- The central Christian ethos of the whole school community promotes a reflective, caring and respectful attitude towards others and the environment.
- There are high expectations of all members of our school community and success in all areas is celebrated.
- We strive to use our resources effectively and support our staff in their professional development, thus enabling all our children to become successful, happy and confident.
- We foster a proactive attitude towards the new technologies, thus providing further opportunities to support learning throughout the school.
- We encourage children to be involved in their own learning and to have positive self-esteem, enabling them to take a full and valuable part as citizens in the wider community.
- Our school values each child. We encourage all children to maximise their potential in all areas of the curriculum and their personal development.
- We are committed to the idea of equal opportunity regardless of gender, race, colour or creed.

In line with the national curriculum for computing, our school 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.

### **3. Attainment targets**

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

#### **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.

### **3. Delivering the Subject curriculum**

Each class has access to hardware such as iPads, netbooks, programmable robots etc. Equipment is stored centrally, and timetabled Computing lessons have priority access to this equipment. At all other times, there is free access for equipment to be used for example as research for a History topic; to create spreadsheets in Science or Maths; to create digital artwork. Teachers are expected to plan for use of ICT resources across the curriculum.

### **4. Inclusion**

To ensure that all children progress in ICT:

Teachers will provide suitable ways for children of different abilities to progress. This includes providing extra support for lower-attaining pupils. This can include resources, adult support or specially tailored activities. Gifted and talented pupils will be suitably challenged. Personalised learning will be promoted and all differentiation will be shown in the planning. Teachers will use a range of teaching styles to cater for the different styles of learners in the classroom. Visual, kinaesthetic and auditory learners will be provided for. An inclusive attitude towards all children will be maintained through the consistency of following the school behaviour policy. All children will be respected regardless of religion, culture, country or place of origin and home life. A range of multi-cultural resources will be used where appropriate.

### **5. Special Educational Needs (SEN)**

Personalised learning will be promoted at all times. Individual Education Plans (IEPs) will be consulted and followed. Children will be given the opportunities to access learning objectives appropriate to their level of understanding and ability. This includes the needs of children with English as an Additional Language.

### **6. Gifted and Talented**

Personalised learning will be promoted to encourage all children to achieve their potential. Provision for Gifted and Talented children will not be merely differentiation through outcome. Children will be stretched and extended where appropriate, and demonstrated either through planning of Computing lessons or through projects and group work.

### **7. Assessment**

Formal assessment based on National Curriculum descriptors is carried out in each year group (with the exception of Nursery and Reception, where Early Learning Goals are used) within the context of taught Computing lessons. A Computing report based on teachers' observations is included in the full end of year report.

## **8. Resources**

The school resources to deliver the aims of the policy include:

- Calculators
- Laptop computers and interactive whiteboards in each classroom
- Access to email and internet through a secure wireless network
- iPads
- Netbook computers
- Roamers and turtles (Beebots)
- A range of software (including Espresso Coding)

## **9. Literacy and ICT**

At St Pauls, ICT is used to enhance learning in English, for example: online research; recording of story planning or poetry for review; 'freeze framing' and short video clips to promote discussion; digital recording of work for presentation etc. A range of resources are available to support these outcomes, including CD ROM based software located on the school's server, Internet based applications, interactive whiteboards, iPads and Netbook Computers.

## **10. Other cross-curricular links**

ICT and Computing opportunities are planned for across the curriculum. Examples include:

Mathematics: Spreadsheets and graphing software; programmable robots

Science: Databases; digital simulations of investigations; spreadsheets to record results; digital data logging (to record temperature for example)

Geography: Online maps and atlases

History: Online research of historical characters and events

PE: Recording of performances for review

## **11. Health and safety**

School health and safety procedures will be followed at all times. Children will be instructed by members of staff and are expected to follow instructions in line with the school behaviour policy. Interactive whiteboard projector safety posters should be displayed prominently.

## **12. Safe use of the Internet**

At St Pauls, we recognise that email and the Internet has the potential to give children access to undesirable information and images. We have done everything possible to ensure that children are protected from such information through the use of security software (a Firewall and web filtering provided by the London Grid for Learning) to provide as safe an environment as possible. We also teach our children how to use email and the Internet safely and with consideration for others.

*(See also: Acceptable Use Policy; e-Safety Policy; Long Term Planning for Computing)*

### **13. The role of the coordinator**

Through liaison with others who have ICT responsibilities, the Computing & ICT coordinator's role includes:

- ascertaining that every department, including special needs and the library, identifies its requirements for ICT provision;
- coordinating the effective use of ICT across the whole curriculum and encouraging aspects of cross-curricular planning;
- helping staff to consider how ICT can support the teaching and learning of other subjects and what those subjects can contribute to the teaching and learning of Computing;
- monitoring on behalf of the senior leadership team the use of, the acquisition of, maintenance and replacement of, equipment and software, and its storage, access and use by pupils and staff;
- ensuring that sensible, transparent decisions are made where there are competing demands for resources;
- encouraging and supporting the professional development of all staff in the use of ICT in their subjects, in line with whole-school policy and practice;
- where applicable liaising with partner primary schools, any local city learning centre, the local education authority and the wider community;
- managing the school's ICT technician and network manager.

### **13. Monitoring and Evaluation**

Teaching standards are monitored through the scrutiny of planning, lesson observations carried out by the subject coordinator and samples of children's work. Pupil's attainment can be monitored by the saving of work in that year group's (server based) shared folder, storage of exemplars in the whole school (server based) 'Evidence' folder, or through the printing of finished work for assessment.

Work is currently evaluated using the National Curriculum level descriptors (below). In line with Government policy, this method of levelling is to be replaced. An alternative is being developed and will be included in this policy following approval.

# Level Descriptors

Level	Handling	Communicating	Measurement and Control	Modelling
6	Pupils use complex lines of enquiry to test hypotheses.	Pupils present their ideas in a variety of ways and show a clear sense of audience.  Pupils discuss the impact of ICT on society.  Pupils develop and refine their work to enhance its quality, using information from a range of sources.	Pupils develop, try out and refine sequences of instructions to monitor, measure and control events, and show efficiency in framing these instructions.	Pupils use ICT-based models to make predictions and vary the rules within the models.  They assess the validity of these models by comparing their behaviour with information from other sources.
5	Pupils select the information they need for different purposes, check its accuracy and organise it in a form suitable for processing.	Pupils use IT to structure, refine and present information in different forms and styles for specific purposes and audiences.  Pupils exchange information and ideas with others in a variety of ways, including e-mail.  Pupils discuss their knowledge and experience of using ICT and their observations of its use outside school.  Pupils assess the use of ICT in their work and are able to reflect critically in order to make improvements in subsequent work.	Pupils create sequences of instructions to control events and understand the need to be precise when framing and sequencing instructions.  Pupils understand how ICT devices with sensors can be used to monitor and measure external events.	Pupils explore the effects of changing the variables in an ICT-based model.
4	Pupils understand the need for care in framing questions when collecting, finding and interrogating information.  Pupils interpret their findings, question plausibility and recognise that poor-quality information leads to unreliable results.	Pupils add to, amend and combine different forms of information from a variety of sources.  Pupils compare their use of ICT with other methods and with its use outside school.  Pupils use ICT to present information in different forms and show they are aware of the intended audience and the need for quality in their presentations.  Pupils exchange information and ideas with others in a variety of ways, including using email.	Pupils use IT systems to control events in a predetermined manner and to sense physical data.	Pupils use IT-based models and simulations to explore patterns and relationships, and make predictions about the consequences of their decisions.
3	Pupils use ICT to save information and to find and use appropriate stored information, following straightforward lines of enquiry.	Pupils use ICT to generate, develop, organise and present their work.  Pupils share and exchange ideas with others. Pupils describe their use of ICT and its use outside school.	Pupils use sequences of instructions to control devices and achieve specific outcomes.	Pupils make appropriate choices when using ICT-based models or simulations to help them find out and solve problems.
2	Pupils use IT to organise and classify information and to present their findings.  Pupils enter, save and retrieve work.	Pupils use IT to help them generate, amend and record their work.  Pupils talk about their experiences of ICT both inside and outside school.  Pupils share ideas in different forms, including, text, tables, images and sound	Pupils plan and give instructions to make things happen and describe the effects.	Pupils use ICT to explore what happens in real or imaginary situations.
1	Pupils explore information from various sources, showing they know that information exists in different forms.	Pupils use ICT to work with text, images and sound to help them share their ideas.  Pupils talk about their use of ICT.	Pupils recognise that many everyday devices respond to signals and commands.  Pupils make choices when using such devices to produce different outcomes.	

## **14. Links to other policies**

For further information see relevant school policies. These include:

Health and Safety

eSafety

Acceptable Use Policy (AUP)

Special Educational Needs

English as an Additional Language

Gifted and Talented

Inclusion