



## St Barnabas CE Primary School

*"Preparing for a positive future, achieved through faith."*

Christian values are central to the life of our school, where we are devoted to inspiring our children to succeed, flourish and live life in all its fullness.

*"Let your light shine."*

Matthew 5:16

# Computing Policy

Policy Updated:	November 2023
Date of next review:	November 2024
Headteacher:	Miss J Hodgkinson
Chair of Governors:	Dr C Kressel

# COMPUTING AT ST BARNABAS

## 1. VISION

At St Barnabas, we understand that our pupils are growing up in an increasingly digital environment where their daily lives are filled with countless interactions with digital technology. It is for this reason that the Computing curriculum is an integral part of the national curriculum and one which possesses the power to enable pupils to thrive in a technology-rich world. The Computing curriculum at St Barnabas provides countless opportunities for pupils to let their light shine and demonstrate our Christian values, from persevering in order to debug errors in algorithms to thinking creatively in their making of digital media, from understanding their responsibility for creating a safe, healthy digital world to understanding the role digital technology can play in creating a just world. It is our vision that Computing at St Barnabas equips our pupils to harness the transformative power of technology to enable them to become the innovators, programmers and problem-solvers of the future.

## 2. LEGISLATION AND GUIDANCE

This policy reflects the requirements of the [National Curriculum programmes of study](#), which all maintained schools in England must teach. It also reflects the requirements for inclusion and equality as set out in the [Special Educational Needs and Disability Code of Practice 2014](#) and [Equality Act 2010](#), and refers to curriculum-related expectations of governing boards set out in the Department for Education's [Governance Handbook](#). In addition, this policy acknowledges the requirements for promoting the learning and development of children set out in the [Early Years Foundation Stage \(EYFS\) statutory framework](#).

## 3. AIMS

At St Barnabas, we aim to:

- provide a broad, balanced, challenging and enjoyable curriculum for all pupils, which meets the requirements of the national curriculum for Computing at Key Stages 1 and 2.
- equip pupils with the declarative knowledge, procedural knowledge and computational thinking that will benefit them throughout their lives.
- respond to new developments in technology to ensure learning is meaningful and prepares learners for the digital world.
- enhance and enrich learning in other areas of the curriculum through the use of computing opportunities.
- develop pupils' ability to use digital technology safely, responsibly and discerningly in order to be digitally literate citizens.

The national curriculum for computing, which our curriculum meets the minimum requirements of, aims to ensure that all pupils:

- can understand and apply the fundamental principles 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.

## 4. RATIONALE

At St Barnabas, we believe that the knowledge and skills developed within the Computing curriculum:

- are essential life skills necessary to fully participate in the modern digital world and the world of work.
- allow children to become creators of digital content rather than simply consumers of it.
- provide pupils with access to a rich and varied source of information and content.
- communicates and presents information in new ways, which helps pupils understand, access and use it more readily.
- can motivate and enthuse pupils.
- offers opportunities for communication and collaboration through group working.
- has the flexibility to meet the individual needs and abilities of each pupil.

## **5. TEACHING AND LEARNING**

At St Barnabas, we have adopted the Teach Computing Curriculum created by the National Centre for Computing Education. This choice has been thoughtfully considered by Senior and Subject Leaders and the curriculum has been carefully evaluated to ensure the component knowledge taught throughout the curriculum is well-sequenced and enables all pupils to know more, remember more and be able to do more. The curriculum's spiral design ensures pupils develop secure and increasingly complex mental models of core computing concepts, apply their growing understanding of these concepts in various computing contexts and do so in a way which is safe, responsible and effective.

In implementing this curriculum, our teachers make use of evidence-informed pedagogical approaches to encourage pupils' success in the subject. These approaches include:

- the use of retrieval practice to embed knowledge and encourage pupils to connect new and prior learning.
- introducing curriculum content through a small-step progression model, ensuring pupils master new content and reducing cognitive load.
- the use of questioning and formative assessment to identify appropriate and challenging next-steps in learning.
- creating a language-rich environment where the use of domain-specific vocabulary is taught, modelled and expected from pupils.
- the use of semantic waves to unpack abstract concepts, ground them in concrete examples before repacking them into their abstract form.
- the use of thoughtfully selected unplugged activities to support pupils to contextualise and explore complex computing concepts.
- the use of dual coding to support pupils to make sense of key concepts and vocabulary in order to strengthen their mental models.

## **6. CURRICULUM OVERVIEW**

The national curriculum for Computing, which underpins the NCCE's Teach Computing Curriculum, categorises the knowledge and skills developed within the curriculum into three areas: computer science, information technology and digital literacy. This overview states the intended learning outcomes at the key phases of learning in primary education:

### *Early Years*

It is our belief that learning in the EYFS offers vital opportunities to develop the foundational knowledge and skills upon which the formal introduction of the Computing curriculum can build in Key Stage One. Therefore, in the Early Years, opportunities to develop computing knowledge are woven throughout all 7 Areas of Learning. These opportunities include those which take place in a computing context, such as when pupils interact with technology to capture photographs of their work, to record their voices, to play music at the listening station, to record time on digital timers or when they learn about keeping themselves safe when using technology. It also includes opportunities which take place in a non-computing context, whereby pupils develop knowledge and skills which will support their understanding of computing concepts. These opportunities

include sorting and grouping activities in Maths, pictorial algorithms in story sequencing, and tinkering activities in role-play and small world areas.

### *Key Stage One*

In Key Stage One, pupils will 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 and computing 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.

### *Key Stage Two*

In Key Stage Two, pupils will 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.

## **7. RESOURCES**

To ensure that the Computing curriculum is successfully delivered, that pupils are properly safeguarded against the risks associated with digital technology and that pupils are able to apply their learning to various computing contexts, the Subject Leader works alongside the school's Computing Support Assistant to ensure that all hardware and software systems are maintained, updated and developed. All classes have access to:

- a suite of 12 networked desktop computers equipped with necessary software;
- 30 networked laptop computers equipped with necessary software;
- 45 networked iPads equipped with necessary software;
- programmable floor robots;
- 30 micro:bits;
- data loggers;
- Crumble kits (provided in collaboration with our local NCCE Computing Hub)
- an interactive whiteboard and laptop (allocated to the class teacher) equipped with audio-visual facilities.

## **8. INCLUSION**

St Barnabas' vision is that every pupil is provided the opportunities necessary for them to let their light shine. This vision guides the implementation of our curriculum, where teachers and teaching assistants set high expectations for all pupils, using relevant sources of pupil information (such as assessment data, EHCPs, Pupil Passports) and evidence-informed pedagogies to set ambitious targets and plan challenging work for all groups of pupils, including:

- pupils with high prior attainment
- pupils with low prior attainment
- pupils from disadvantaged backgrounds
- pupils with Special Educational Needs and Disabilities
- pupils with English as an Additional Language
- pupils who are International New Arrivals

For further information about inclusion at St Barnabas, please see our SEND and Equality policies.

## **9. ASSESSMENT, FEEDBACK AND RECORDING**

### *Assessment*

At St Barnabas, teachers understand the power of assessment in enabling staff to understand what pupils have learnt before, what they need to learn now and what they will learn next. Assessment takes two forms in the Computing curriculum: formative and summative. Formative assessment is ongoing and is used by teachers delivering the Computing curriculum to deliver responsive, adaptive teaching which ensures all pupils are able to master the complex concepts of the Computing curriculum. The learning outcomes stated within each unit's overview are used by teachers to record pupils who are not meeting the curriculum expectations. This information is used, alongside end-of-unit quizzes and assessment rubrics, to inform the summative assessment data provided by teachers at biannual data drops. This data is submitted to Senior and Subject Leaders to support their monitoring of the impact of the Computing curriculum.

### *Assessment*

Due to the nature of work generated in Computing lessons, feedback is expected to take the form of live or whole-class feedback, rather than written feedback. Teachers are able to harness the power of live feedback to address misconceptions and errors in the moment, supporting pupils to make good progress throughout a lesson and, as a consequence, throughout a unit of learning.

### *Recording*

Examples of learning in Computing is recorded in individual class STEM Floorbooks. These are used as an opportunity to record unplugged activities and pupil discussions. Floorbooks are an excellent opportunity not only to record the powerful learning activities which take place away from a computer, but also allow pupils to easily look back on their prior learning to make connections with new learning and review their progress. The software used within the Computing curriculum, such as Scratch, Tinkercad and Google Slides, also provide pupils with the ability to save examples of their work for monitoring, assessment and personal reflection purposes.

## **10. MONITORING**

Senior and Subject Leaders monitor the implementation and impact of the Computing curriculum regularly as part of St Barnabas' rigorous monitoring schedule. As part of this monitoring schedule, the Subject Leader will:

- perform lesson drop-ins to observe the teaching of the Computing curriculum.
- conduct pupil voice sessions to gain insights into the impact of the Computing curriculum.
- review work recorded in floorbooks and digital platforms to monitor the consistency of the curriculum implementation and the progress of pupils.
- review and analyse summative assessment data to ascertain trends and areas for development.
- review and update the Subject Action Plan in line with insights gained during monitoring.

## **11. ROLES AND RESPONSIBILITIES**

### *The Governing Board*

It is the responsibility of the Governing Board to monitor the effectiveness of this policy and hold the headteacher to account for its implementation. They will also ensure that:

- a robust framework is in place for setting curriculum priorities and aspirational targets.
- sufficient teaching time is provided for pupils to access the requirements of the national curriculum and other statutory requirements.
- proper provision is made for pupils with different abilities and needs, including children with Special Educational Needs and Disabilities (SEND).
- the school implements the relevant statutory assessment arrangements.
- it participates actively in decision-making about the breadth and balance of the curriculum.
- it fulfils its role in processes to disapply pupils from all or part of the national curriculum, where appropriate, and in any subsequent appeals.

#### *Headteacher*

It is the responsibility of the headteacher to ensure that this policy is adhered to, and that:

- all required elements of the Computing curriculum, and additional provision which the school chooses to offer, have aims and objectives which reflect the aims of the school and indicate how the needs of individual pupils will be met.
- the amount of time provided for teaching the required elements of the curriculum is adequate and is reviewed by the Governing Board.
- where appropriate, the individual needs of some pupils are met by permanent or temporary disapplication from all or part of the national curriculum.
- they manage requests to withdraw children from non-statutory elements of the curriculum, where appropriate.
- the school's procedures for assessment meet all legal requirements.
- the Governing Board is fully involved in decision-making processes that relate to the breadth and balance of the curriculum.
- the Governing Board is advised on whole-school targets within the School Development Plan (SDP) in order to make informed decisions.
- proper provision is in place for pupils with different abilities and needs, including International New Arrivals (INA) and children with Special Educational Needs and Disabilities (SEND).

#### *Subject Leader*

It is the responsibility of the Subject Leader to:

- regularly and rigorously monitor the implementation of the Computing curriculum in line with the school's monitoring schedule in order to identify strengths and areas of development.
- maintain an up-to-date Subject Action Plan based upon identified strengths and areas of development to continually move the subject forward.
- provide the Link Governor with information on the development of the subject at termly Link Governor meetings.
- work alongside Senior Leaders to provide appropriate opportunities for continuing professional development to ensure an outstanding standard of teaching and learning.
- support staff delivering the Computing curriculum to reflect upon and refine their practice in line with educational research and guidance.
- regularly audit resources necessary for the successful and effective implementation of the Computing curriculum.

#### *Teachers*

It is the responsibility of teaching staff to:

- deliver the Computing curriculum in line with this policy and other relevant school-wide policies regarding teaching and learning.
- assess pupils' success in the Computing curriculum, both formatively and summatively, and report summative data to the Subject Leader.

- to work alongside the Subject Leader to maintain their subject knowledge and engage in appropriate continuing professional development opportunities as required.

## **12. LINKS TO OTHER POLICIES**

This subject policy links to the following policies:

- Online Safety Policy
- Remote Learning Policy
- Curriculum Policy
- Equality Policy
- SEND Policy
- Mobile Technology and Social Media Policy
- Assessment Policy
- Marking and Feedback Policy

## **ANNEX 1 – TEACHING ONLINE SAFETY IN SCHOOLS**

This annex contains information from the non-statutory guidance from the DfE, which we implement within our computing curriculum across the school. A link to the full report is here: <https://www.gov.uk/government/publications/teaching-online-safety-in-schools/teaching-online-safety-in-schools>

It is the responsibility of the DSL and governors to ensure that appropriate monitoring and filtering systems are in place within the school's own network. Our servers and networks are monitored by EDAC. This annex also links closely with the school's mobile technology and social media policy.

In line with Keeping Children Safe in Education 2022, pupils are taught about the 4Cs in an age appropriate way, using SCARF materials (PSHE/RSE, the Teach Computing Curriculum and Project Evolve). These are:

- **content:** being exposed to illegal, inappropriate or harmful material; for example pornography, fake news, racist or radical and extremist views;
- **contact:** being subjected to harmful online interaction with other users; for example commercial advertising as well as adults posing as children or young adults;
- **conduct:** personal online behaviour that increases the likelihood of, or causes, harm; for example making, sending and receiving explicit images, or online bullying.
- **commerce:** risks such as online gambling, inappropriate advertising, phishing and or financial scams.

Through the new RSE element of the national curriculum, pupils will be taught about online safety and harms. This will include being taught about what positive, healthy and respectful online relationships look like, the effects of their online actions on others and knowing how to recognise and display respectful behaviour online. Throughout these subjects, teachers will address online safety and appropriate behaviour in an age-appropriate way that is relevant to their pupils' lives. This will complement the computing curriculum, which covers the principles of online safety at all key stages, with progression in the content to reflect the different and escalating risks that pupils face. This includes how to use technology safely, responsibly, respectfully and securely, and where to go for help and support when they have concerns about content or contact on the internet or other online technologies. During online safety lessons, pupils will be asked to consider questions such as:

- What does this cookie do and what information am I sharing?
- Is this person who they say they are?
- Why does someone want me to see this?
- Why does someone want me to send this?
- Why would someone want me to believe this?
- Why does this person want my personal information?
- What's behind this post?
- Is this too good to be true?
- Is this fact or opinion?
- Is this website/URL/email fake? How can I tell?

Asking questions such as these will enable out pupils to recognise acceptable online behaviour and what it can look like in different forms, to be cautious and aware of various online risks, how pupils can be persuaded through certain wording or how things are presented and what to do to seek advice or report inappropriate behaviour. Children are made aware of CEOP and Childline. Teachers can use the document 'Education for a connected World framework', which provides age-appropriate advice, knowledge, skills are resources.

Children will be taught age-appropriate information that will include:

- Age restrictions
- Digital footprints
- Cookies
- Misinformation
- Checking online authenticity
- Fraud
- Phishing
- Privacy settings

The core Relationships and Health education curriculum covers all necessary teaching to enable pupils to stay safe online and considers the well-being of pupils; therefore this appendix links closely to the schools PSHE/RSE policy.