St Mary's CE Primary School

N8 7QN

Computing Policy

Jesus said, "Love one another as I have loved you." (John 15:12)

Our Vision

As we love, we flourish

As we flourish, we aspire

As we aspire, we achieve

Together, we are a family.

Friendship, Compassion, Hope, Wisdom, Community, Endurance.

St Mary's CE Primary School

Policy for Computing

Through our daily school life at St Mary's Church of England Primary School we encourage our children to build respectful friendships and demonstrate compassion towards others. Through this we build a strong community spirit, as together we are a family. Our teaching and learning provides the children with the wisdom and endurance they need to expand their minds socially, morally and academically so allowing them to achieve and flourish and fulfil 'Life in all its Fullness.' (John 10:10). We encourage our children to demonstrate and develop a dignity in their work and themselves which enables them to hope to aspire to be the best they can possibly be.

1. Vision / Intent

The knowledge and use of computers and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill for the future.

At St Mary's CE Primary School, we recognise that pupils are entitled to and will provide a rich and diverse computing education which addresses the National Curriculum objectives with a coherently planned and structured, progressive approach to understanding concepts and developing talents within computer science and the acquisition of real-world I.T. skills. These will enable children to aspire and flourish not only in computing but in many arenas with accomplished transferrable skills.

We will ensure equal access to learning for all pupils, with high expectations for every pupil and appropriate levels of challenge and support so that all children experience, enjoy and make progress. Through confident and well-designed teaching of computing, utilising the opportunities that computing provides, we will encourage children to become ambitious, eager and independent in pursuit of skill development and in the application of computational thinking to approach problems. Faced with problems, children require, hope, resilience, discipline and endurance, which are also real-life universal skills, in order to persevere.

All these abilities, in conjunction with instruction in living well together through E-Safety tuition, empower children to achieve what is necessary to become confident, compassionate, and digitally literate members of their modern community.

Our vision is to equip children with a solid foundation of tools and experiences in the use of computational thinking to independently carry these forwards to support them through secondary education and beyond - to make sense of and take their place as active participants in an ever-increasing digital world and give them choices in future such as an industry full of opportunities.

This policy is a statement of the aims, principles and strategies for the teaching, learning and assessment of Computing at St Mary's CE Primary School and how the school intends to make this provision.

2. Aims

The school's aims are to:

- Meet the requirements of the national curriculum programmes of study for Computing at Key Stage 1 and 2
- Provide a broad, balanced, challenging and enjoyable curriculum for all pupils.

- To enrich each child's life in all its fullness, to develop pupil's transferrable computational thinking and I.T. skills that will benefit them throughout their lives.
- To equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- To respond to new developments in technology.
- To enhance and enrich learning in other areas of the curriculum using IT and computing.
- To develop the understanding of how to use computers and digital tools safely, respectfully and responsibly.
- Equip teachers and staff with the subject knowledge and confidence to plan, teach and assess computing to the expectations required of the subject.

The National Curriculum for Computing aims to ensure that all pupils:

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

3. What is Computing?

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 made confident in the use of information technology to design and write programs that achieve specific goals and, through developed endurance to cope wisely when things go wrong, debug and solve problems. Computing also ensures that pupils become digitally literate in two further senses. That they are able to use, express and develop their ideas through current information technology at a level suitable for the future workplace. Also, that they acquire skills to remain vigilant and safe online, respect and compassion for others, as well as build positive relationships as active participants in a digital community.

4. Rationale

The school believes that IT, computer science and digital literacy:

- Are essential life skills necessary to fully participate in the modern digital world.
- Allows children to become creators of digital content rather than simply consumers of it.
- Provides 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 to aspire further.
- Offers opportunities for positive relationships by means of communication and participation in collaboration through group working.
- Has the flexibility to meet individual needs while developing the talents and confidence of each pupil.

5. Objectives

Early Years Foundation Stage:

1. Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.

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 can raise delight by featuring IT scenarios based on experience in the real world, such as in role play. Children establish the foundation of computational thinking skills either through role-play or cross curricular activities

which involve sequence, patterns, logical steps and repetition. Children gain knowledge, control and language skills through opportunities such as 'programming' each other using instructions or directional language to find toys/objects, creating artwork using digital drawing tools and controlling programmable toys.
Relationships established in early play and developing social skills involved in friendships, compassion, and living well together is the underpinning for E-Safety teaching in creating positive social norms online for a respectful online community.
Outdoor exploration is an important aspect and using digital recording devices such as video recorders, cameras and microphones can support children in developing communication skills. This is particularly beneficial for the participation of children who have English as an additional language

By the end of key stage 1 pupils are taught to:

1. Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.
2. Create and debug simple programs.
3. Use logical reasoning to predict the behaviour of simple programs
4. Use technology purposefully to create, organise, store, retrieve and manipulate digital content.
5. Recognise common uses of information technology beyond school.
6. Use technology safely and respectfully, keeping personal information private and be able to identify where to go for help when they have concerns about content or contact on the internet or other online technologies.

By the end of key stage 2 pupils are taught to:

1. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
2. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
3. Make predictions; use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
4. 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
5. Explain how search results are selected and ranked. Use search technologies effectively, appreciate and be discerning in evaluating digital content.
6. 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.
7. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

6. Planning

The St Marys CE Primary School Planning Overview for Computing has been written using the National Curriculum objectives and based on the:

- Islington Computing Planning,
- Islington Computing Skills Progression document
- National Centre for Computing Education (DfE) planning.

These have been used in order to create a bespoke and progressive sequence that encourages wisdom and endurance in all areas of computing (Computer Science, I.T. and E-Safety).
Supporting materials e.g. individual lesson plans, are available for each lesson / activity included within the planning.

In order to achieve coverage over the course of a school year, teachers will need to teach Computing both as a required discrete subject and integrating cross-curricular opportunities.

- Teaching of **computer science** and **e-safety** should be taught as discrete. To assist with planning, quality of teaching, sequence, timings, and provision of resources, teachers are entitled to plan for weekly sessions or 'block off' days / weeks.
- Teaching of **I.T.** should be taught in a cross-curricular fashion. In order to achieve coverage, teachers should look for opportunities to achieve their year group's I.T. objectives outlined in the Computing Overview, by including I.T. within the planning of other subjects. For example, creating storyboards within English; using word processors or presentation software to store and display history research or using I.T. to create graphs during maths or science. The Computing Planning Overview supports this.

Please see St Mary's Computing Overview

7. Inclusion and Equal Opportunities

Some children will have particular teaching and learning requirements which go beyond the provision for that age range and if not addressed, could create barriers to learning.

SEN

Every effort must be made by teachers to ensure that pupils with SEN or disability are enabled to participate as fully and as effectively as possible in all computing activities.
Teachers should take specific action to enable the effective participation of pupils with SEN or disability through effective planning. Differentiated activities and lessons not included in the computing scheme of work are available on request from the computing lead.

More Able / G&T

More able pupils should generally be catered within the class by use of a variety of extension activities, by greater depth in questioning and understanding and by an emphasis on work involving higher order thinking skills. Furthermore, these children should be given opportunities to explain their knowledge, thinking and learning using high-level technical vocabulary with precision.

Equal Opportunities

All children, regardless of their race, gender or ability will be given respect and equal opportunities to develop their knowledge and achieve skills and understanding of computing.

EAL

Children with English as an additional language are supported in a variety of ways, including but not limited to; reading of questions, repeating of instructions, translated instructions and practical demonstration of skills. E.g. within code.org, facility exists to make use of Immersive Reader to read instructions and hints in desired language.

8. Resources and Access

The school acknowledges the need to continually maintain, update and develop its resources and to make progress towards consistent, compatible computer systems by investing in resources that will effectively deliver the objectives of the National Curriculum and support the use of IT, computer science and digital literacy across the school. Teachers are required to inform the computing subject leader of any faults as soon as they are noticed. Computing network infrastructure and equipment has been sited so that:

- There are four class sets of Chromebooks at Rectory Gardens site (1 per KS2 year group).
- There are 15 iPads at Rectory Gardens site.
- There are 45 Chromebooks at the Church Lane site (15 touch screen, 30 standard)
- There are two class sets of iPads at Church Lane site.

- All classrooms have been provided with 2 separate Chromebooks to be used at teacher's discretion. Possible uses include 1:1 or small group sessions. EAL / SEN access to learning.
- Internet access is available in all classrooms across both sites.
- Appropriate software pre-installed on each computer, iPad
- Subscriptions acquired for online platforms e.g. code.org / busy things
- IWB in each classroom.
- A class set of BeeBots programmable robots
- A class set resource to facilitate lessons involving 'Cubetto'.
- Most classrooms have two desktops available.
- The Chromebooks and iPads are available for use throughout the school day as part of computing lessons and for cross-curricular use.
- Pupils may use resources independently, in pairs, alongside a TA or in a group with a teacher.
- The school has a computing technician who visits twice weekly and can be contacted via email.
- A governor has been selected to take particular interest in computing in the school.

9. Marking, Assessment and Record Keeping

For detailed guide, please also see Evidence and Assessment Guidance within St Mary's School Computing Overview.

Marking

Feedback to pupils about their own progress in computing is achieved by effective marking, which

- Aims to be encouraging, supportive and provide clear achievable next steps to aspire to.
- Takes into account the learning objective of the task.
- Includes agreed marks, scores, results and written comments with errors clearly indicated.
- Is in accordance with the school's marking policy.

Assessment and Record Keeping

Teachers regularly assess progress through observations and evidence. Key objectives to be assessed against are taken from the National Curriculum. The school uses the NC Objectives in the form of 'I can' statements as a guide when assessing pupils. Each pupil's attainment is then recorded either online using the J2 Review facility within J2 Tool Suite or on a paper assessment tracker also containing the same objectives within the pupil's Computing Folders. Assessing computing is an integral part of teaching & learning and key to good practice.

Assessment should be process orientated - reviewing the way that techniques and skills are applied purposefully by pupils to demonstrate their knowledge of computing concepts as well as their correct use and ownership of technical vocabulary.

As assessment is part of the learning process, it is essential that pupils are closely involved.

Assessment can be broken down into;

- Formative assessments are carried out during and following short focused tasks and activities. They provide pupils and teaching staff the opportunity to reflect on their learning in the context of the agreed success criteria. This feeds into planning for the next activity or subsequent lesson.
- Summative assessment should review pupils' ability and provide a best fit 'level' and help with future planning. Independent tasks provide several opportunities and scope for pupils to demonstrate their capability throughout. There should be an opportunity for pupil review and identification of next steps. Summative assessment should be recorded for all pupils – showing whether the pupils have met, exceeded or not achieved the learning objectives.

As well as specific opportunities for assessment listed below, teachers should assess the children's work in computing by making informal judgments or observations as they monitor the children during lessons.

- Within computer science or I.T. based lessons, screen shots or embeddings of children's work alone would not be sufficient to evidence attainment as it may be the case that all the students produced the same work. Screenshots or embeddings should be accompanied by an independent

statement by the pupil using key vocabulary as this will provide an opportunity for students to demonstrate their level of understanding of the learning objectives and ownership of the skills and vocabulary taught. This should enable teachers to discern between children achieving, exceeding or not having met the learning objectives.

- In events where there is no specific or formal task to evidence understanding, children should be given the opportunity to write an independent summary of the lesson which demonstrates their understanding as similarly described in the above bullet point.

Once the children complete work, teachers should make a summary judgment of the work for each pupil as to whether they have yet to obtain, obtained or exceeded the expectations of the task; recorded either within J2 Review or the children's Computing Folders.

The children's work is to be saved either digitally using J2 Tool Suite, SeeSaw or in paper form in the children's Computing Folders.

Cross-curricular work should be made evident and assessed according both to its computing merits and within the subject from which the task was set. Hard-copy work could be kept within the children's Computing Folders or if possible, photographs taken and uploaded to the J2 Tool Suite. Digitally created work saved within the J2 Tool Suite could be printed off or a QR code generated to be evidenced within the corresponding subject book.

10. Monitoring and Evaluation

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 is through planning, lesson observations, pupil discussion, evaluating pupil work and scrutiny of data. Times will be allocated within the monitoring cycle for the vital task of reviewing samples of children's work and for visiting classes to observe teaching in the subject.

11. The Role of The Subject Leader

There is a computing subject leader who is responsible for the implementation of computing policy across the school. Their role is to:

- Lead in policy development and effectively integrating the programme of study for computing into the school curriculum to ensure progress and continuity in pupils experience of computing throughout the school
- Offer help and support to all members of staff (including teaching assistants) in their teaching, planning and assessment of computing.
- Use appropriate assessment techniques and approaches
- Maintain up to date assessment records.
- Help staff to use assessment to inform future planning.
- Provide colleagues opportunities to observe good practice in the teaching of computing.
- Advise staff on the use of digital tools, technologies and resources.
- Assist in the responsibility for the purchase, organisation and maintenance of software and hardware.
- Monitor classroom teaching or planning following the schools monitoring programme and advising the head teacher and governing body on action needed.
- Monitor the children's progression in computing, looking at examples of work of different abilities.
- Manage the computing budget.
- Keep up-to-date with new technological developments and communicate information and developments with colleagues.
- Lead staff training on new initiatives.
- Attend appropriate in-service training.
- Have enthusiasm for computing and encourage staff to share this enthusiasm.
- Keep parents and governors informed on the implementation of computing in the school.

- Liaise with all members of staff on how to reach and improve on agreed targets.
- Provide equality of opportunity using a range of teaching approaches and techniques.
- Liaise with appropriate staff members to maintain the school website.

12. Staff Training

The computing subject leader will assess and address staff training needs as part of the annual development plan process or in response to individual needs and requests throughout the year so that they can best teach the Computing curriculum planning in place.
Individual teachers should attempt to continually develop their own skills and knowledge, identify their own needs and notify the subject leader.
Teachers will be encouraged to use IT and computing to produce plans, reports, and communications and teaching resources.

13. Homework

Homework is not expected to be used to support the Computing curriculum as access to home computers can be variable. However, individual teachers can assess this variable individually and if appropriate are able to set homework digitally using J2 Tool Suite / SeeSaw.

14. Parental Involvement and Reporting to Parents

Parents are encouraged to support the implementation of IT and computing where possible by encouraging use of IT and computing skills at home for pleasure, through home-learning tasks and use of the school website.
Parents will be made aware of issues surrounding E-Safety and encouraged to promote this at home.
Reporting in Computing will be done in accordance with the school's reporting policy and will include an end of year teacher assessment comment for Years 1 to 6.

15. Health and Safety

Health and safety issues in computing include:

- Setting up and moving equipment.
- Establishing appropriate working conditions.
- General electrical safety.

16. Security

- The subject lead and computing technician /coordinator will be responsible for regularly updating anti-virus software.
- Use of ICT and computing will be in line with the school's 'acceptable use policy'/ I.T. Code of Conduct. All staff, volunteers and children must sign a copy of the schools AUP / I.T. Code of Conduct
- Parents will be made aware of the 'acceptable use policy' at school entry
- All pupils will be aware of the school rules for responsible use on login to the network and will understand the consequence of any misuse.

17. Additional Policies

In Addition to the computing policy, the following policies are also available:

- Online Safety policy
- Acceptable use agreements
- Health and Safety Policy