



Read St. John's Computing Policy

At Read St. John's we aim to unlock the potential for everyone to flourish whilst being rooted and grounded in God's love. We aim high, so together as one family, we can fly.

This policy outlines the intent, implementation and impact of the teaching and learning of all aspects of the computing curriculum. It has been written by the subject leader Karen Casson and reviewed by the headteacher and governors. The subject is led by the subject leader and the staff as a whole and each year, time is set aside to review standards and monitor curriculum provision and ensure training and resources are up to date.

Intent

At Read St. John's Technology we follow the National Curriculum for Computing and agree that 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. is everywhere and will play a pivotal part in their lives. We want to model and educate the children on how to use technology positively, responsibly and safely. We want the children to understand that there is always a choice with using technology and as a school we model positive use. We recognise that the best prevention for a lot of issues we currently see with technology/social media is through education. We also understand the accessibility opportunities technology can provide for the children. We encourage staff to embed computing across the whole curriculum to make learning creative, accessible and fun.

Implementation

At Read St. John's we use the National Centre for Computing Education – Teach Computing Curriculum as the basis for our planning. We try to enable cross curricular links where possible.

Children will learn computing through individual lessons (applying them to cross-curricular work as appropriate). A progressive scheme of learning is provided in our separate computer **skills progression document** and **topic map**. This is based on the National Curriculum and is designed to enhance and deepen children's learning as they progress through school. The Teach Computing Taxonomy is based on 10 areas of learning: Networks, Creating Media, Data and Information, Design and Development, Computing Systems, Impact of Technology, Algorithms, Programming, Effective use of Tools and Safety and Security. **EYFS Curriculum**

Computing is taught in Reception as an integral part of the topic work through child-initiated and adult led activities. We aim to ensure that children of Reception age receive a broad, play-based experience of computing using new technologies. This will ensure that children learn essential computing skills across the areas of learning and begin to understand how to keep safe online.

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National Curriculum:

KS1

The children will 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 (1.1)
- create and debug simple programs (1.2)
- use logical reasoning to predict the behaviour of simple programs (1.3)
- use technology purposefully to create, organise, store, manipulate and retrieve digital content (1.4)
- recognise common uses of information technology beyond school (1.5)
- 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. (1.6)

KS2

The children will 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 (2.1)
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output (2.2)
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs (2.3)
- 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 (2.4)
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content (2.5)
- 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 (2.6)
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. (2.7)

Spiritual, moral, social and cultural development

Spiritual development: Computing provides opportunities for reflection of awe and wonder about the achievements in ICT today and the possibilities for the future. ICT lets children have the opportunity to reflect on how computers can sometimes perform better in certain activities than people. To promote childrens' spiritual development, their sense of self and their will to achieve, school continually takes the opportunity to praise students for their contribution in lessons.

Moral development: Children consider issues surrounding the misuse and access rights to personal data. Children consider the effects of social networking and the consequences of cyber bullying; they also consider the legal aspects of ICT including the Data Protection Act, Computer Misuse Act and Copyright legislation. They consider the implications of file sharing and downloading illegally and the penalties for engaging in this type of activity. Computing helps children to explore aspects of real and imaginary situations and enables them to reflect on the possible consequences of different actions and situations.

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Social development: As part of the computing curriculum children are taught to think and produce work that reflects the needs of diverse audiences within our community and the wider community.

As children develop their skills in a range of software they are challenged to work in groups to find solutions whilst developing respect for the ideas and opinions of others in their team. This is particularly prevalent in the design phase of tasks given. In addition, children are encouraged to develop their team working skills through collaborative work and research. The children also explore the concept of teams and the roles that individuals have to play. Computing can also help all students to express themselves clearly and to communicate.

Cultural development: Computational thinking encourages children to develop and explore their problem solving skills. Computing empowers students to apply their ICT and computing skills and to gain knowledge of how programming links between subjects for instance maths.

Children explore how developments in technology have changed our culture, particularly the rise in social networking sites and the ability to communicate instantly across National and International borders. Computing involves the breaking through of linguistic and cultural barriers. It is possible to e-mail or chat across the world and to word process in the mother tongue.

Assessment, Monitoring and Moderation

At Read St. John's, assessment is an integral part of the teaching process. Assessment is used to inform planning. The assessment of children's work is on-going to ensure that understanding is being achieved and that progress is being made. Throughout the school, teachers will assess whether children are working below, just below, on track or at greater depth. for their age based on their understanding and application of the content of the National Curriculum 2014. Progress and attainment is reported to parents through parents' evenings and end of year reports.

Feedback is given to the children as soon as possible and marking work will be guided by the school's Marking Policy. Children will make links between current areas of study and their previous learning. End of year assessment on key learning takes place by class teachers.

Monitoring and moderation takes place regularly through:

- Monitoring of planning
- Learning Walk
- Observations
- Scrutiny of Books/Work
- Moderation of work
- Discussions with Children/Pupil Voice Questionnaires
- Staff Meetings and Staff Audits
- Meetings/observations with the nominated governor.

Safeguarding

Protecting young people in the online world means thinking beyond the school environment. Increasingly students will have access to personal devices not covered by our school's network protection and therefore the emphasis needs to be on educating all users as to the risks involved and their obligation to act responsibly while online in all types of settings. All school staff should be aware of this policy and understand their personal responsibility with regard to keeping young people safe online and how to respond to e-safety incidents. Safeguarding children and young people in both the real and virtual world is everyone's responsibility. It is an extension of general safeguarding and this policy should be read alongside the Safeguarding and Child Protection Policy. The Head Teacher, supported by the governing body, will take the lead in embedding the agreed e-safety policies in practice. The member of the Senior Management team with responsibility for safeguarding and should be the central contact point for all e-safety issues. All pupils should be made aware of the school's acceptable user policy and what to do if they have any Internet safeguarding concerns.

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Resources

- Classrooms have desktop computers and access to centrally-located laptops, tablets and ipads.
- Bee-bots and probots, Lego Wedo, Lego Mindstorms, Knex, FlowGO, Makey Makey, Microbits, microphones are available to support the computing curriculum.
- A variety of software is available online and on server for example: Espresso Coding, Scratch, Tinkercad, and a variety of STEM sites.
- Equipment is kept up to date and repaired by a computer technician who visits school once and week and Netsweeper is used as a web filter.
- Jam Coding provide an extra-curricular weekly club for learners.
- The Subject Leader is a subscriber to Hello Computing and a regular user of online CPD (such as blogs, Twitter, FutureLearn, Computing for School, STEM, Barefoot Computing etc). Staff are provided with training as needed at staff meetings/Insets. Subject Leader has achieved the National Centre for Computing Education Certificate in Primary Computing Teaching.

Impact

The children are digitally literate and can discuss, reflect and appreciate the impact computing has on their learning, development and well-being. They can find the right balance of technology to support learning and healthy lifestyle making the appropriate choices when using technology and are confident in using computing vocabulary. They show confidence in believing that they will achieve and show perseverance and resilience in computing and achieve objectives (expected standard) for year group (or EHCP plan for SEND children if different) as shown in the National Curriculum and in the progression of skills for computing separate document. They show a high level of pride in the presentation and understanding of the work when they share, celebrate and publish their work.

The impact is demonstrated through the children's learning outcomes by the end of KS2.

They:

- 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.

This policy was updated in September 2022 and will be reviewed in September 2023.