COMPUTING RATIONALE

OVERVIEW
St Peter's provides a high-quality computing education that equips pupils to use computational thinking and creativity to understand and change the world. Meaningful cross-curricular links are made especially with mathematics, science and design and technology which provide insights into both natural and artificial systems. Our computing curriculum encourages the use of technology across all subjects. The core of our computing curriculum 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.

INTENT
1. Pupils will build on their knowledge and understanding as they progress through school so that they are equipped to use information technology to create programs, systems and experience a range of content.
2. Pupils will 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.
3. Pupils will be able to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
4. Pupils will have a shared vocabulary that is built on as they progress through schools so that they can express themselves with a confident knowledge and understanding of computing terminology.
5. Pupils will be able to analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.
6. Pupils will be able to evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
7. Pupils will be responsible, competent, confident and creative users of information and communication technology and will be aware of how to staff safe in a digital world.
8. Pupils with any residual gaps in knowledge will continue to receive additional support.

IMPLEMENTATION
1. Pupils are taught weekly or in blocks using a combination of the Kapow computing scheme and some bespoke teacher prepared units of work.
2. Pupils engage in both plugged (computer based) and unplugged (non-computer) activities.
3. Units of work have additional challenges to challenge the most able pupils and supported tasks for those children working below the standard.
4. Pupils' work is assessed regularly, and this assessment informs teaching practise and support.
5. Pupils collaborate with a computing partner to ensure they have the opportunity to use the language of computing, plan their approaches to problems and develop reasoning skills.
6. Pupils regularly use their understanding of information technology in all year groups to support their learning.
7. Year groups 3-6 have a designated combined design technology/computing unit of work once a year.
8. Pupils' work is moderated during dedicated staff meeting time.
9. Pupils are 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.
10. In EYFS links to computing are embedded throughout the curriculum e.g. instructions for making things, directional language and algorithms and where appropriate technology used to enhance the learning
11. Pupils are taught to create and debug simple programs in KS1 and design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.
12. Pupils are taught to use logical reasoning to predict the behaviour of simple programs and in KS2 they will be taught how to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.
13. Pupils will learn how to use technology purposefully to create, organise, store, manipulate and retrieve digital content.
14. Pupils are taught how to recognise common uses of information technology beyond school and 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.
15. Pupils will learn how to use sequence, selection, and repetition in programs; work with variables and various forms of input and output.
16. Pupils are taught how to use search technologies effectively, appreciate how results are selected and ranked, and to be discerning in evaluating digital content.
17. Pupils will learn how to 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.
18. Computing knowledge is cumulative with concepts repeated, reinforced and built upon in each year group. St Peter's has a robust scheme of work which reinforces concepts throughout the units of work across the year and throughout the child's primary education. Additional time will be taken by teachers during each lesson to reinforce vocabulary alongside concepts in order to close the gaps in children's knowledge and understanding.

IMPACT

By the end of each key stage, pupils are able to know, apply and understand the matters, skills and processes specified in the relevant programme of study. Pupils know how to 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. Pupils recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

The overwhelming majority of pupils at St Peter's achieve the expected standard in computing in each year group and some evidence a deeper understanding. They develop a shared language of computing that has been embedded throughout each stage of their education. Pupils have developed a wide variety of knowledge and skills that prepare them for their next stage of learning including: reasoning, planning, debugging and sequencing skills. They have a shared enthusiasm for the subject as evidenced in pupil-voice interviews.