



God's Love in Action

Our children are at the heart of everything we do through **Christian values and relationships**. **Living and learning together** we celebrate the uniqueness and diversity of everyone in our family. We nurture a sense of **self belief, mutual respect and belonging** through Social Emotional Learning and academic excellence. We are dedicated to building the foundations for **happy and successful life-long learning**.

Computing

Intent

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1. Curriculum Vision

Computing is an integral part of our everyday life. Many aspects of the modern world are run by technology: from self-service shopping to social media and everything in-between. Ever since the creation of the first computer and the internet, the world is rapidly transforming into an ever-growing globalised community, governed by advancements in technology. 'The Future of Work Evidence Report' (2014) explicitly outlines how integral computing will be in the future workforce. It is likely that many of our children will end up in careers heavily influenced by technology. If we want our children to succeed as "life-long learners," then we must do our best to prepare them for this reality.

2. Curriculum Aims

Aims of Computing Curriculum:

- To develop children's individual computing capability and understanding
- To ensure all children know how to stay safe online
- To enhance teaching and learning in other areas of the curriculum by cross curricular use of computing
- To develop computing as a tool for learning and investigation
- To equip pupils with the confidence and capability to use IT throughout their education, home and further work life.
- To recognize the potential, and deepen the necessity of computing in everyday life
- To stimulate interest in new technologies

3. National Curriculum

At St John's and St Peter's, we use the National Curriculum and its targets for Key Stage 1 and Key Stage 2 to guide our Computing Curriculum. With a clear progression of built on skills, children will develop and secure new and existing knowledge around the ever-growing technological world.

Purpose of study

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.

The national curriculum for computing 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.

Therefore, our Computing Curriculum is designed with three strands that run throughout:

- Digital Literacy
- Information Technology
- Computer Science

4. Why study Computing in this way?

a) Why has this knowledge been selected?

Kapow Primary's Computing scheme aims to instil a sense of enjoyment around using technology and to develop pupil's appreciation of its capabilities and the opportunities technology offers to, create, manage, organise, and collaborate.

"Tinkering" with software and programs forms a part of the ethos of the scheme as we want to develop pupils' confidence when encountering new technology, which is a vital skill in the ever evolving and changing landscape of technology. Through our curriculum, we intend for pupils not only to be digitally competent and have a range of transferable skills at a suitable level for the future workplace, but also to be responsible online citizens.

The scheme of work enables pupils to meet the end of Key Stage Attainment targets outlined in the National curriculum and the aims align with those in the National curriculum. We want our children to enjoy computing, striving to make it an enjoyable and engaging part of the school curriculum. We want our children to learn not only basic computing skills (how to use a mouse, how to log in), but start to effectively work towards increasing their skills and knowledge. From using Microsoft Office programmes (Word, Excel, PowerPoint), to online coding websites (Scratch) and everything in between, we want our children to successfully build a bank of skills that will allow them to become efficient and excel in the use of ICT in this ever-modernising world.

b) Why is it taught in this order?

In order for our children to get most out of their learning during their time in primary school, skills are built up over time with a clear path of what the end goal should be. Using similar programs throughout their time, children learn and build upon skills that will keep them on top of an ever-changing technological world. Each half term has a clear focus taken from the five key areas (Computing systems and networks, Programming, Creating Media, Data Handling and Online Safety), creating a cyclical route through which pupils can develop their computing knowledge and skills by revisiting and building on previous learning.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception					Introduction to computers	Introduction to computers
Year 1	Improving Mouse skills	Algorithms unplugged	Rocket to the Moon	Bee-bots	Digital Imagery	Introduction to Data
Year 2	What is a computer?	Algorithms and debugging	Word Processing	Scratch Jr	Stop Motion	International Space Station
Year 3	Networks and Internet	Scratch	Emailing	Journey into a Computer	Video Trailers	Comparison Cards
Year 4	Collaborative Learning	Programming 1 Further coding	Website Design	HTML	Computational Thinking	Investigating Weather
Year 5	Search Engines	Data Handling Mars Rover 1	Stop Motion Animation	Programming Music	Programming Micro:Bit	Skill Showcase Mars Rover 2
Year 6	Bletchley Park	Intro in Python	Big Data 1	Big Data 2	History of Computers	Skill Showcase Inventing a Product

In Reception, children are introduced to what a computer is and how to use inputs, such as a keyboard and mouse, which leads into children being able to login independently and use basic programs. This continues into Y1 as children continue to develop the skills they need to be able to use a keyboard and mouse confidently. Once this skill has been mastered, children can learn an independence allowing them to be able to use a wide range of office-based programs, including word processing and presentation making to inspire their interests even further.

In KS2, children will start to use more complex office programs to create spreadsheets and website making, once again allowing children to explore different ways to access and display their work and ideas.

With coding becoming more necessary in the even more technical world, children will use coding programs and website, such as Scratch and ScratchJr, which will introduce them to the world of coding with simple block building. Scratch is used across all year groups, once again allowing the children to learn and build on exist skills, which will help them to craft skills and knowledge that could help them going forward into the world.

Online safety, whilst covered explicitly in PSHE lessons through our Jigsaw scheme of work, is also taught throughout all units.

c) How are Computing lessons taught at St John's?

Computing lessons at St John's and St Peter's happen once a week, and normally last for around one hour. Computing is taught every half term and in every year group. A range of staff teach computing, but each are supporting with training and guidance from the subject lead so that they can feel as confident as possible. Each lesson has a clear learning objective and begins with a short recap of prior learning. This could be verbally, or using a tool such as Microsoft Forms to test retrieval. After this, there will be an opportunity for new learning, with direct teacher input and modelling of the key skill, followed by a chance for the children to apply their knowledge and skills. On top of this, children will have opportunities to use their computing knowledge in all lessons across the curriculum, whether that be for research on laptops to taking pictures for Art using our cameras.

Hardware

As a school, we understand that to for children to receive the best teaching we can offer, we need to ensure that the hardware that we supply is of top quality and dependable. Alongside a purpose-built

ICT suite containing 30 computers, all KS2 classrooms have access to thirty class-based laptops (supplied by the DfE). The computers within the suite are constantly being upgraded to deal with the constant change and needs of the children. Classroom based laptops allow our children to have access to the internet and other office-based products allowing for smooth cross curriculum links and without the disruption of moving to another part of the school.

With a move from static servers to cloud based storage, adults and children can remotely access their works and files anywhere across the school and at home. This freedom has allowed adults to move away from traditional saving methods to more secure and protected techniques keeping the safety of everyone at the forefront of what we do.

In addition, we recently purchased 30 digital cameras which the children can now use as part of our Computing curriculum. We felt it was important that children used cameras as well as tablets as they offered more scope to teach photography.

Finally, we bought 30 x BBC Microbits to enhance our coding provision.

