

## The 2014 Computing Curriculum

### 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.

### Key stage 1 – St John’s Infant and Nursery School

#### Pupils should be taught to:

- 1.i understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- 1.ii create and debug simple programs
- 1.iii use logical reasoning to predict the behaviour of simple programs
- 1.iv use technology purposefully to create, organise, store, manipulate and retrieve digital content
- 1.v recognise common uses of information technology beyond school
- 1.vi 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.

### Key stage 2

#### Pupils should be taught to:

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

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## Key ideas for the learning themes mapped to the 2014 Computing Curriculum At St John's Infant and Nursery School

Key stage	Learning theme	Key idea	Mapping to 2014 Computing Curriculum
EYFS	Finding out	Children use different technologies and onscreen resources to investigate the world around them, comparing digital and non-digital and sharing what they have discovered. They increasingly know what to do if something they see makes them worried or uncomfortable.	Preparation for: 1.iv 1.v 1.vi
	Images and light	Children explore some of the different ways digital images can be captured and viewed, including using magnification and investigating the effect of light.	Preparation for: 1.iv 1.v 1.vi
	Toys and machines	Children build the early foundation for programming, by investigating some of the technologies and digital toys in the classroom. They begin to use a simple programming language to play robot and to control simple onscreen and physical devices.	Preparation for: 1.i 1.ii 1.iii
	Making marks	Children explore ways we use technology to write and to draw, using a broad range of devices and input tools. They develop knowledge of the keyboard through regular links to phonics. They are increasingly able to use a login to the school system.	Preparation for: 1.iv 1.v 1.vi
	Exploring sound	Children investigate and respond to a range of digital sound and music on varied devices, comparing this to live sound. They capture their own sound and share with others.	Preparation for: 1.iv 1.v 1.vi
KS1	Let's create (Year 1)	Children begin to explore digital texts, creating their own digital content (still image, word and sound) using a range of devices and software. They develop understanding of some of the devices they use and apply some unplugged programming approaches to support their understanding.	1.iii 1.iv 1.v 1.vi
	Discovering programming	Children use a range of approaches to develop their understanding of algorithms and programming, including unplugged approaches and simple onscreen and physical devices.	1.i 1.ii 1.iii 1.v 1.vi
	Starting research	Children develop understanding of researching using both digital and non-digital sources, understanding they need to check what they discover. They use charts, graphs and mind maps to present the results of their research.	1.iv 1.v 1.vi
	Getting creative (Year 2)	Children develop their understanding of digital texts, creating their own digital content (still, moving and animated image and word) using a range of devices and software with increased precision. They demonstrate understanding of some of the devices they use. They use unplugged approaches to support their understanding of algorithms.	1.i 1.ii 1.iv 1.v 1.vi
	Talking and sharing	Children explore various ways of conveying messages using both digital and non-digital systems. They use emails and respond to blogs. They explore very simple onscreen simulations and link these to their understanding of algorithms.	1.i 1.iii 1.iv 1.v 1.vi
	Visual information	Children investigate how we derive information from the world around us, including both digital and non-digital sources. They use	1.iii 1.iv 1.v 1.vi

<b>Key stage</b>	<b>Learning theme</b>	<b>Key idea</b>	<i>Mapping to 2014 Computing Curriculum</i>
		datalogging devices to explore environmental conditions and organise objects using branching databases. They compare the ways in which people and computer programs might sort such objects.	