St Thomas of Canterbury

Catholic Primary School

Computing Subject Statement

INTENT

"A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. 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."

National Curriculum, 2014

By the end of their time at St Thomas of Canterbury, we want pupils to be able to:

- understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- be responsible, competent, confident and creative users of information and communication technology.

IMPLEMENTATION

St Thomas of Canterbury use the Kapow Scheme of work to deliver the Computing curriculum.

Key Stage 1

Pupils 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
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content

- recognise common uses of information technology beyond school
- 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 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
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- 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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	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
EYFS	**Computing systems and networks** Using a computer (All 5 lessons)	**Programming 1** All about instructions (All 5 lessons)	**Programming 2** Exploring hardware (4 lessons: 1-4 only)	**Data handling** Introduction to data (4 lessons: 1-4 only)	**N/A**
Year 1	**Computing systems and networks** Improving mouse skills (3 lessons: 1-3 only)	**Programming 1** Algorithms unplugged (4 lessons: 1, 2 , 4 and 5 only)	**Creating media** Digital imagery (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 1-3 only)	**Programming 2** Bee-bot (Option 1: Bee-Bot) (Option 2: Virtual Bee-Bot) (4 lessons: 1, 3, 4 and 5 only)	**Online safety** Online safety Y1 (All 4 lessons)
Year 2	**Computing systems and networks 1** What is a computer? (3 lessons: 1, 2 and 5 only)	**Programming 1** Algorithms and debugging (4 lessons: 1, 2, 4 and 5 only)	**Data Handling** International Space Station (3 lessons: 1, 3 and 5 only)	**Programming 2** ScratchJr (4 lessons: 1, 2, 4 and 5 only)	**Online safety** Online safety Y2 (4 lessons: Teach all five by combining lessons 3 and 4)
Year 3	**Computing systems and networks 1** Networks and the internet (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 1, 3 and 5 only)	**Computing systems and networks 3** Journey inside a computer (3 lessons: 1, 2 and 5 only)	**Creating media** Video trailers (Option 1: Using devices other than iPads) (Option 2: Using iPads) (4 lessons: 1-4 only)	**Programming** Programming: Scratch (4 lessons: 1, 2, 3 and 5 only)	**Online safety** Online safety Y3 (All 4 lessons)

	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
Year 4	**Computing systems and networks** Collaborative learning (Option 1: Google) (Option 2: Microsoft Office 365) (4 lessons: 1, 3, 4 and 5)	**Programming 1** Further coding with Scratch (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 2-4 only)	**Data Handling** Investigating weather (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 1, 3, 4 and 5)	**Programming 2** Computational thinking (4 lessons: 1-4 only)	**Online safety** Online safety Y4 (4 lessons: 1, 2, 3 and 5)
Year 5	**Computing systems and networks** Search engines (Option 1: Google) (Option 2: Microsoft Office 365) (4 lessons: 1-4)	**Data Handling** Mars Rover 1 (3 lessons: 1, 2 and 4)	**Creating media** Stop motion animation (Option 1: Stop Motion Studio) (Option 2: with cameras) (4 lessons: 1-4)	**Programming** Programming music (Option 1: Sonic Pi) (Option 2: Scratch) (4 lessons: 1-4)	**Online safety** Online safety Y5 (3 lessons: 1, 4 and 5)
Year 6	**Computing systems and networks** Bletchley Park (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 1-3)	**Data Handling** Big data 1 (4 lessons: 1, 3, 4 and 5)	**Creating media** History of computers (Option 1: Google) (Option 2: Microsoft Office 365) (3 lessons: 3-5)	**Programming** Intro to Python (4 lessons: 1-4)	**Online safety** Online safety Y6 (4 lessons: 1, 2, 4 and 6)

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IMPACT

The impact of our strategies will be evaluated through monitoring by the subject leader and the head teacher to include learning walks, book looks, pupil conferencing and data analysis. The aim is that our pupils have the opportunities to leave the school secure in the computer knowledge that will enable them to access the Year 7 curriculum and continue their learning journey.

October 2022