Whole School

Computing Curriculum

	Avent 1	Advent 2	Lent 1	Lent 2	Pentecost 1	Pentecost 2
EYFS	Computing through continuous provision.	Computer systems and networks 1 Using a computer	Programming 1 All about instructions	Computer systems and networks 2 Exploring hardware	Programming 2 Beebots	Data handling Introduction to data.
Year 1	Computer systems and networks Improving mouse skills	Programming 1 Algorithms unplugged	Date handling Introduction to data	Programming 2 Beebots	Creating media Digital imagery	Skills showcase Rocket to the moon
Year 2	Computer systems and networks 1 What is a computer?	Programming 1 Algorithms and debugging	Computer systems and networks 2 Word processing	Programming 2 ScratchJR	Creating media Stop motion	Data handling International space station
Year 3	Computer systems and networks 1 Networks	Programming Scratch	Computer systems and networks 2 Emailing	Computer systems and networks 3 Journey inside a computer	Creating media Video trailers	Data handling Comparison cards databases
Year 4	Computer systems and networks Collaborative learning	Programming 1 Further coding with Scratch	Creating media Website design	Skills showcase HTML	Programming 2 Computational thinking	Data handling Investigating weather
Year 5	Computer systems and networks Search engines	Programming 1 Programming music	Data handling Mars Rover 1	Programming 2 Microbit	Creating media Stop motion animation	Skills showcase Mars Rover 2
Year 6	Computer systems and networks Bletchley Park	Programming Intro to python	Data handling Big data 1	Creating media History of computers	Data handling Big data 2	Skills showcase Inventing a product

Whole-school definition of computing

Computing is the study of computers that include information technology (how IT is used), digital literacy (how IT is used safely and effectively) and computer science (how computers work). Computing is the process of using computer technology to complete a given goal-oriented task.

Aspects of Computing

Curriculum Themes

Aspects of Computing curriculum

The aspects of the computing curriculum are recurring themes that appear throughout the curriculum in all series.

Each Learning Point will link to one or more of these areas.

The 3 main components of computing knowledge are:

Computer science, information technology and digital literacy.

Computer science National Curriculum

The study of computers and algorithmic processes, including their principles, their hardware and software designs, their applications, and their impact on society.

- 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. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.
- Solve problems by decomposing them into small 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 Appreciate how (search) results are selected and ranked.

Information technology National Curriculum

The study, use, and development of **computer systems** for storing, processing, retrieving, and sending information.

- ❑ Use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- ❑ Use search technologies effectively.
- ❑ 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

Digital literacy National Curriculum

Digital Literacy is the ability and skill to find, evaluate, utilise, share, and create content using information technologies and the Internet.

- ❑ 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 the internet or other online technologies.
- ❑ Understand the opportunities (networks) offer for communication and collaboration Be discerning in evaluating digital content Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

Key stage 1 National Curriculum attainment targets

Key stage 1

Pupils should 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.

Year 1

Year 1 Overview	
Block 1	Computer systems and networks: Improving mouse skills
Block 2	Programming 1: Algorithms unplugged
Block 3	Date handling: Introduction to data
Block 4	Programming 2: Beebots
Block 5	Creating media: Digital imagery
Block 6	Skills showcase: Rocket to the moon

Year 2

Year 2 Overview

Block 1	Computer systems and networks 1: What is a computer?
Block 2	Programming 1: Algorithms and debugging
Block 3	Computer systems and networks 2: Word processing
Block 4	Programming 2: ScratchJR
Block 5	Creating media: Stop motion
Block 6	Data handling: International space station

Key stage 2 National Curriculum attainment targets

Key stage 2

Pupils should 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.

Year 3

Year 3 Overview

Block 1	Computer systems and networks 1: Networks
Block 2	Programming: Scratch
Block 3	Programming: Scratch
Block 4	Computer systems and networks 3: Journey inside a computer
Block 5	Creating media: Video trailers
Block 6	Data handling: Comparison cards databases

Year 4

Year 4 Overview

Block 1	Computer systems and networks: Collaborative learning
Block 2	Programming: Further coding with Scratch
Block 3	Creating media: Website design
Block 4	Skills showcase: HTML
Block 5	Programming 2: Computational thinking
Block 6	Data handling: Investigating weather

Year 5

Year 5 Overview

Block 1	Computer systems and networks: Search engines
Block 2	Programming 1: Programming music
Block 3	Data handling: Mars Rover 1
Block 4	Programming 2: Microbit
Block 5	Creating media : Stop motion animation
Block 6	Skills showcase: Mars Rover 2

Year 6

Year 6 Overview

Block 1	Computer systems and networks: Bletchley Park
Block 2	Computer systems and networks: exploring AI
Block 3	Data handling: Big data 1
Block 4	Programming: Intro to python
Block 5	Data handling: Big data 2
Block 6	Skills showcase: Inventing a product