

Computing: National Curriculum Overview

FOUNDATION STAGE (Non Statutory)	
<ul style="list-style-type: none"> • To learn what a keyboard is and how to locate relevant keys • To learn how to log in and log out. • To understand why we need to log in and out. • To follow instructions as part of practical activities and games • To give simple instructions • To learn that an algorithm is a set of instructions to carry out a task, in a specific order • To learn how to explore and tinker with hardware to develop familiarity and introduce relevant vocabulary • To recognise that a range of technology is used in places such as homes and schools • To learn how to operate a camera and/or iPad and use it to take photographs. • To understand the meaning of directional arrows • To follow a simple sequence of instructions • To experiment with programming a Bee-bot/Blue-bot • To explore and tinker with hardware to develop familiarity and introduce relevant vocabulary • To experiment with programming a Bee-bot/Blue-bot and to learn how to give simple commands • To learn to debug instructions, with the help of an adult, when things go wrong • To learn that an algorithm is a set of instructions to carry out a task, in a specific order • To follow an algorithm as part of an unplugged game • To learn to debug instructions, with the help of an adult, when things go wrong 	
KEY STAGE ONE	
National Curriculum Requirements	Computing Unit
Understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions.	Computing systems and networks: Improving mouse skills (Y1) Programming 1: Algorithms unplugged (Y1) Programming 2: Bee-Bot (Y1) Creating media: Digital imagery (Y1) Algorithms and debugging (Y2)
Create and debug simple programs	Computing systems and networks: Improving mouse skills (Y1) Programming 1: Algorithms unplugged (Y1) Programming 2: Bee-Bot (Y1) Creating media: Digital imagery (Y1) Algorithms and debugging (Y2)
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Data handling: Introduction to data (Y1) Skills showcase: Rocket to the moon (Y1) Computing systems and networks 1: What is a computer? (Y2) Computing systems and networks 2: Word processing (Y2) Programming 2: Scratch Jr (Y2) Creating media: Stop motion – Option 1: Using tablet devices (Y2) Data handling: International Space Station (Y2)
Recognise common uses of information technology beyond school	Data handling: Introduction to data (Y1) Skills showcase: Rocket to the moon (Y1) Computing systems and networks 1: What is a computer? (Y2) Computing systems and networks 2: Word processing (Y2) Programming 2: Scratch Jr (Y2) Creating media: Stop motion – Option 1: Using tablet devices (Y2) Data handling: International Space Station (Y2)

Use logical reasoning to predict the behaviour of simple programs	Computing systems and networks: Improving mouse skills (Y1) Programming 1: Algorithms unplugged (Y1) Programming 2: Bee-Bot (Y1) Creating media: Digital imagery (Y1) Algorithms and debugging (Y2)
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.	Online safety: Year 1 (Y1) Online safety: Year 2 (Y2)
LOWER KEY STAGE TWO	
National Curriculum Requirements	Computing Unit
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Programming: Scratch (Y3) Computing systems and networks 3: Journey inside a computer (Y3) Creating media: Video trailers (Y3) Programming 1: Further coding with Scratch (Y4) Skills showcase: HTML (Y4) Programming 2: Computational thinking (Y4) Data handling: Investigating weather (Y4)
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	Programming: Scratch (Y3) Computing systems and networks 3: Journey inside a computer (Y3) Programming 1: Further coding with Scratch (Y4)
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Programming: Scratch (Y3) Computing systems and networks 3: Journey inside a computer (Y3) Programming 1: Further coding with Scratch (Y4) Programming 2: Computational thinking (Y4)
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.	Computing systems and networks 1: Networks and the internet (Y3) Computing systems and networks 2: Emailing (Y3) Data handling: Comparison cards databases (Y3) Computing systems and networks: Collaborative learning (Y4) Creating media: Website design (Y4)
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Computing systems and networks 2: Emailing (Y3) Data handling: Comparison cards databases (Y3) Data handling: Investigating weather (Y4)
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.	Computing systems and networks 1: Networks and the internet (Y3) Computing systems and networks 2: Emailing (Y3) Computing systems and networks 3: Journey inside a computer (Y3) Creating media: Video trailers (Y3) Data handling: Comparison cards databases (Y3) Computing systems and networks: Collaborative learning (Y4) Data handling: Investigating weather (Y4)
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Computing systems and networks 2: Emailing (Y3) Creating media: Video trailers (Y3) Data handling: Comparison cards databases (Y3) Online safety: Year 3 (Y3) Computing systems and networks: Collaborative learning (Y4) Creating media: Website design (Y4) Online safety: Year 4 (Y4)

UPPER KEY STAGE TWO

National Curriculum Requirements	Computing Unit
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Programming 1: Music (Y5) Programming 2: Micro:bit (Y5) Creating media: Stop motion animation (Y5) Computing systems and networks: Bletchley Park (Y6) Programming: Intro to Python (Y6) Skills showcase: Inventing a product (Y6)
Use sequence, selection, and repetition in programs; work with variables and various forms of input and output.	Programming 1: Music (Y5) Programming 2: Micro:bit (Y5) Creating media: Stop motion animation (Y5) Computing systems and networks: Bletchley Park (Y6) Programming: Intro to Python (Y6) Skills showcase: Inventing a product (Y6)
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	Programming 2: Micro:bit (Y5) Computing systems and networks: Bletchley Park Skills showcase: Inventing a product
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.	Data handling: Mars Rover 1 (Y5) Skills showcase: Mars Rover 2 (Y5) Data handling 1: Big Data 1 (Y6) Creating media: History of computers (Y6) Data handling 2: Big Data 2 (Y6)
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Computing systems and networks: Search engines (Y5) Data handling: Mars Rover 1 (Y5) Skills showcase: Mars Rover 2 (Y5) Skills showcase: Mars Rover 2 (Y5) Computing systems and networks: Bletchley Park (Y6) Creating media: History of computers (Y6) Skills showcase: Inventing a product (Y6)
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.	Computing systems and networks: Search engines (Y5) Programming 1: Music (Y5) Skills showcase: Mars Rover 2 (Y5) Computing systems and networks: Bletchley Park (Y6) Data handling 1: Big Data 1 (Y6) Creating media: History of computers (Y6) Data handling 2: Big Data 2 (Y6) Skills showcase: Inventing a product (Y6)
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Computing systems and networks: Search engines (Y5) Online safety: Year 5 (Y5) Computing systems and networks: Bletchley Park Skills showcase: Inventing a product Online safety: Year 6 (Y6)