

EYFS: Computer Science



Computational Thinking	National Curriculum Objectives: Children recognise that a range of technology is used in places such as homes and schools. They select and use technology for particular purposes.	Follow simple oral algorithms Spot simple patterns Sequence simple familiar tasks	MrPICT resources
Coding Programming		Use a mouse, touch screen or appropriate access device to target and select options on screen Input a simple sequence of commands to control a digital device with support (Bee Bot)	Beebot, Daisy The Dinosaur

Year 1: Computer Science



Computational Thinking	National Curriculum Objectives: Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous Instructions	Understand what algorithms are Write simple algorithms Understand that the sequence of algorithms is important Debug simple algorithms Understand that algorithms are implemented as programs on digital devices	MrPICT resources. Beebot, Scratch Jnr
Coding Programming	Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	Create a simple program e.g. sequence of instructions for a BeeBot Use sequence in programs Locate and fix bugs in their program	Beebot, Scratch Jnr, Kodable

Year 2: Computer Science



Computational Thinking	National Curriculum Objectives: 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	Write algorithms for everyday tasks Use logical reasoning to predict the outcome of algorithms Understand decomposition is breaking objects/processes down Implement simple algorithms on digital devices (Bee Bots, Apps: Daisy the Dino) Debug algorithms	MrPICT resources
Coding Programming	Use logical reasoning to predict the behaviour of simple programs	Understand programs follow precise and unambiguous instructions Create programs on a variety of digital devices Debug programs of increasing complexity Use logical reasoning to predict the outcome of simple programs	Beebot, Scratch Jnr, Kodable, Tynker,

Year 3: Computer Science



Computational Thinking	National Curriculum Objectives: 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.	Create algorithms for use when programming Decompose tasks (such as animations) into separate steps to create an algorithm Understand abstraction is focusing on important information Identify patterns in an algorithm Use repetition in algorithm	MrPICT resources
Coding Programming	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.	Design and create programs Write programs that accomplish specific goals Use repetition in programs Work with various forms of input	Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
Computer Networks	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	Understand that computers in a school are connected together in a network Understand why computers are networked Understand the difference between the Internet and the World Wide Web (WWW)	MrPICT resources

Year 4: Computer Science



Computational Thinking	National Curriculum Objectives: 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 abstraction to focus on what's important in a design Write increasingly more precise algorithms for use when programming Use simple selection in algorithms Use logical reasoning to detect and correct errors in programs	MrPICT resources
Coding Programming		Use simple selection in programs Work with various forms of output Use logical reasoning to systematically detect and correct errors in programs Work with various forms of output	Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
Computer Networks	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	Understand that servers on the Internet are located across the planet Understand how email is sent across the Internet Understand how the Internet enables us to collaborate	MrPICT resources

Year 5: Computer Science



Computational Thinking	National Curriculum Objectives: 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.	Solve problems by decomposing them into smaller parts Use selection in algorithms Recognise the need for conditions in repetition within algorithms Use logical reasoning to explain how a variety of algorithms work Use logical reasoning to detect and correct errors in algorithms Evaluate my work and identify errors	MrPICT resources
Coding Programming	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.	Create programs by decomposing them into smaller parts Use selection in programs Use conditions in repetition commands Work with variables Create programs that control or simulate physical systems Evaluate my work and identify errors	Beebot, Scratch Jnr, Kodable, Tynker, Scratch 3, Hopscotch, Swift Playgrounds,
Computer Networks	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	Understand how we view web pages on the Internet Use search technologies effectively Understand that web spiders index the web for search engines Appreciate how pages are ranked in a search engine	MrPICT resources