MrPICT.com Computing Progression Document

	Computational Thinking	
Year Group	**Key Vocabulary**	**Apps and Links**
EYFS	Instruction, follow, first, next,	Resources from MrPICT.com, Barefoot Computing
1	Algorithm, sequence, order, bug, fix, precise	Resources from MrPICT.com, Barefoot Computing
2	Decomposition, debug, reason, detail, breakdown, task	Resources from MrPICT.com, Barefoot Computing
3	Abstraction, information, relevant, pattern, same, different, complex	Resources from MrPICT.com, Barefoot Computing
4	Logical reasoning, design, algorithmic thinking, selection, repeat	Resources from MrPICT.com, Barefoot Computing
5	Evaluation, effectiveness, complexity, data, prediction, condition	Resources from MrPICT.com, Barefoot Computing
6	Generalisation, pattern, reuse, modify, remix, critical	Resources from MrPICT.com, Barefoot Computing

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Computational Thinking

Year Group	NC Objectives	Knowledge Statements
EYFS	Creative and critical thinking Active learning (through unplugged activities)	• I begin to understand an algorithm is a sequence of instructions or set of rules to get things done. (Algorithms) • I can follow a simple algorithm by responding to oral instructions. (Algorithms) • I can begin to make my own simple algorithms by sequencing actions. (Algorithms) • I can start to explain my thought process and justify my decisions. (Logical reasoning) • I can explain what is the same and what is different (Pattern)
1	• Co2/1.1 understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • Co2/1.2 create and debug simple programs • Co2/1.3 use logical reasoning to predict the behaviour of simple programs	• I understand what algorithms are • I know how to write simple algorithms • I understand the sequence of algorithms is important • I know how to debug simple algorithms
2		• I know how to write algorithms for everyday tasks • I know how to use logical reasoning to predict the outcome of algorithms • I understand decomposition is breaking objects/processes down • I know how to debug algorithms

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Year Group	**NC Objectives**	**Knowledge Statements**
3	• Co2/1.1 design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts • Co2/1.2 use sequence, selection, and repetition in programs; work with variables and various forms of input and output • Co2/1.3 use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs • Co2/1.4 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	• I know how to create algorithms for my programming projects • I know how to decompose projects (such as an animation) into steps to create an algorithm • I understand abstraction is focusing on important information • I know how to identify patterns in an algorithm
4		• I know how to use abstraction to focus on what's important in my design • I know how to write more precise algorithms for use when programming • I know how to use simple selection and repetition in algorithms • I know how to use logical reasoning to detect and correct errors in programs
5		• I know how to solve problems by decomposing them into smaller parts • I know how to use selection in algorithms • I know how to use logical reasoning to explain how a variety of algorithms work • I know how to evaluate the effectiveness of algorithms
6		• I know how to decompose a design or code to focus on specific parts • I know how to use abstraction to hide complexity in my design or code • I know how to recognise and make use of patterns in my design and code • I know how to critically evaluate my work and suggest improvements

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