Computing Progression of Skills

		Year 3	Year 4	Year 5	Year 6
Computer Science		• design, write and debug programs that accomplish specific goals	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems	• design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts	• 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	• use sequence, selection, and repetition in programs; work with variables	• use sequence, selection, and repetition in programs; work with variables and various forms of input and output	• 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	• use logical reasoning to explain how some simple algorithms work and to detect errors in algorithms	• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	• use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
IT		• understand computer networks including the internet	• understand computer networks including the internet; how they can provide multiple services, such as the world wide web	• 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	• 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	• use search technologies effectively, appreciate how results are selected and ranked	• use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	• 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	• 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	• 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	• 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

Online Safety	• use technology safely, respectfully and responsibly	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

KS2 Computer Science Progression of Skills

	Year 3	Year 4	Year 5	Year 6
Computer Science	**Animal Challenges** **Design 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	**Count Controlled Loops** Toy Give Away **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	**Condition starts action** Making Choices **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	**Define Procedures** Basic Procedures **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
	Conversation **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**	**Count Controlled Loops** Dog Chase **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	**Condition starts action** Diving Beetle **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	**Variables as Placeholders** Placeholder **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

Magic Carpet **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**	**Exploring Loops** **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**	**Condition switches between actions** Wizards Choice **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**	**Variables & Numbers** Walker One **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
Ladybug Munch **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**	**Exploring Continuous Loops** Helicopter Game **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	**Condition Switches Between 2 Actions** Cheese Crush **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**	**Define & Run Basic Procedure** Crab Maze **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