Computer Science Key Knowledge Progression

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Physical Computing	Know that predictions can be made about what might happen. Know that a command is an instruction for controlling a robot. Know that robots can follow a sequence of instructions. Know how to run a command. Know how to follow a series of	Know that an algorithm is a series of instructions. Know how to follow multi-step instructions given by someone else. Know how to give clear instructions. Know how to write an algorithm. Know how to test and debug part of a program.	Know that loops can be used to repeat commands. Know that a variable holds changing information. Know how to use sequencing to create an animation. Know how to program multiple inputs.	Know that conditionals will only run if something is 'true'. Know that loops can be used to indicate how often a sequence will run. Know that variables can be used to trigger outputs. Know how to use sensors as inputs. Know how to use loops when	Know that conditionals can be used in order to trigger events. Know how to program multiple inputs and outputs. Know how to use loops with conditionals.	Know how to apply conditionals in different contexts. Know that multiple variables can be created in different programming contexts. Know how to use event, motion and condition blocks to control a sprite. Know how to decompose a

	instructions. Know how to program a robot to follow instructions.			programming.		game to help solve problems. Know how to change a sprite's costume in order to animate it. Know how to create a variable to track and record data.
Coding	Know that blocks of code can be used to control an on-screen sprite. Know that commands must be sequenced in a logical order. Know that codes can be repeated.	Know that loops can be used to reduce the number of blocks of code used. Know that there are benefits of loops rather than manual repetition. Know that blocks	Know that predictions can be used to help find solutions to problems. Know that programs can be modified to remove bugs. Know how to find a bug and	Know that bugs are errors in a program and can be fixed with debugging. Know that nested loops can make a program more efficient. Know that conditionals only	Know that functions can be used to simplify complex programs. Know that prior coding knowledge can be applied in different environments.	Know that computer simulations can be used to collect data about a model. Know that AI plays a role in everyday life. Know that events are actions which

Know that a loop block can be used to repeat instructions. Know how to program a virtual robot to follow instructions. Know how to click and drag blocks. Know how to begin to debug a simple program. Know how to break down a long sequence of instructions.	of code can be used to create sequences. Know how to break down long sequences using loops. Know how to use simple event blocks. Know that event blocks can trigger behaviours.	attempt to fix it. Know how to use loops to make a program more efficient. Know how to make a game using multiple event blocks.	run if something is 'true'. Know how to find and correct bugs in a program. Know how to use a greater range of event blocks. Know how to use nested loops. Know how to use conditionals.	Know that conditionals can be used to trigger events. Know how to create new sprites and assign them costumes and behaviours. Know how to create an interactive computer program. Know how to use more complex nested loops. Know how to differentiate between when	trigger behaviours in a program. Know, and be able to give examples of, what a variable is. Know how to use more complex events to change how a program runs. Know how to recognise a variable in a program. Know how to create and control multiple sprites.

				commands need to be repeated in loops and when not. Know how to use predetermined functions to complete tasks. Know how to code simple functions to complete tasks. Know how to use loops with conditionals.	Know how to train and test an AI machine.