

Computer Science Key Knowledge Progression

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

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

	<p>to repeat instructions.</p> <p>Know how to program a virtual robot to follow instructions.</p> <p>Know how to click and drag blocks.</p> <p>Know how to begin to debug a simple program.</p> <p>Know how to break down a long sequence of instructions.</p>	<p>sequences.</p> <p>Know how to break down long sequences using loops.</p> <p>Know how to use simple event blocks.</p> <p>Know that event blocks can trigger behaviours.</p>	<p>Know how to use loops to make a program more efficient.</p> <p>Know how to make a game using multiple event blocks.</p>	<p>Know how to find and correct bugs in a program.</p> <p>Know how to use a greater range of event blocks.</p> <p>Know how to use nested loops.</p> <p>Know how to use conditionals.</p>	<p>be used to trigger events.</p> <p>Know how to create new sprites and assign them costumes and behaviours.</p> <p>Know how to create an interactive computer program.</p> <p>Know how to use more complex nested loops.</p> <p>Know how to differentiate between when commands need to be repeated in loops and when not.</p>	<p>program.</p> <p>Know, and be able to give examples of, what a variable is.</p> <p>Know how to use more complex events to change how a program runs.</p> <p>Know how to recognise a variable in a program.</p> <p>Know how to create and control multiple sprites.</p> <p>Know how to train and test an AI machine.</p>
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