



# Waterbeach Community Primary School

## Curriculum Capture for Year 4 Computing: Coding

Key Knowledge		
<b>Explain the stages of the design, code, test, debug coding process</b>	<b>When are variables and if/else statements useful?</b>	<b>What do the terms decomposition and abstraction mean?</b>
<p>This is a process to go through as you create a program using coding.</p> <ul style="list-style-type: none"> <li><u>Design</u>: Create a design which could be a flowchart, a labelled diagram or a storyboard. This helps to think through the algorithms required</li> <li><u>Code</u>: code the algorithms using and adapting the design.</li> <li><u>Test and Debug</u>: see if the program works and fix any errors.</li> </ul>	<p>When coding programmes with selection.</p> <ul style="list-style-type: none"> <li>The variable could be set either to 0 or 1 and this could be changed by user action or a timer.</li> <li>If/else statement outcomes could depend upon the value of the variable.</li> </ul>	<ul style="list-style-type: none"> <li><u>Decomposition</u> is breaking a task into its component parts so that each part can be coded separately. If you were coding a game of chess, you could decompose into the moves of the different pieces and the setup of the playing space.</li> <li><u>Abstraction</u> is removing unnecessary details to get the program functioning. In the example, the colour and size of the squares is not important to game play.</li> </ul>

Vocabulary			
Action	Types of commands, which are run on an object. They could be used to move an object or change a property.	Input	Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.
Alert	This is a type of output. It shows a pop-up of text on the screen.	Output	Information that comes out of the computer e.g. sound.
Algorithm	a precise step by step set of instructions used to solve a problem or achieve an objective.	Object	An element in a computer program that can be changed using actions or properties. In 2Code, buttons, characters and vehicles are types of objects.
Bug	A problem in a computer program that stops it working the way it was designed.	Input	Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.
Command	A single instruction in a computer program.	Selection	This is a conditional/decision command. When selection is used, a program will choose a different outcome depending on a condition.
Control	These commands determine whether parts of the program will run, how often and sometimes, when.	Simulation	A model that represents a real or imaginary situation.
Debugging	Looking for any problems in the code, fixing and testing them.	Timer	Use this command to run a block of commands after a timed delay or at regular intervals.
Design mode	Used to create the look of a 2Code computer program when it is run.	Variable	A named area in computer memory. It has a name and a value. The program can change this variable value.
Event	Something that causes a block of code to be run.	Repeat	This command can be used to make a block of commands run a set number of times or forever.
Get Input	This puts the text that a user types into the computer's temporary memory to be used to control the program flow.	If/Else	A conditional command. This tests a statement. If the condition is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run.

**An example code to generate a series of random sentences.**

