

Unit: 5.1 – Coding Knowledge Organiser

	Key Learning	Date covered
Lesson 1: Y5-CS2; Y5-CS3	To use a sketch or storyboard to represent a program design and algorithm. To use this design to create a program.	
Lesson 2: Y5-CS2; Y5-CS3	To design and write a program that simulates a physical system	
Lesson 3: Y5-CS2; Y5-CS3	To review the use of number variables and to explore text variables	
Lesson 4: Y5-CS1; Y5-CS2; Y5-CS3 ; Y5-CS4	To create a playable, competitive game that combines the use of variables, if/else statements and repeats	
Lesson 5: Y5-CS1; Y5-CS2; Y5-CS3 ; Y5-CS4	To create a playable, competitive game that combines the use of variables, if/else statements and repeats	
Lesson 6: Y5-CS1;Y5-CS2; Y5-CS3	To explore the launch command	

Action - Commands used to move an object or change a property
e.g: Up, Down, Left, Right, Show, Hide, Stop

Alert - This is a type of output. It shows a pop-up of text on the screen.

Algorithm - A precise step by step set of instructions used to solve a problem or achieve an objective.

Bug - A problem in a computer program that stops it working the way it was designed.

Code block - A group of commands that are joined together and are run when a specific condition is met or when an event occurs.

Code Design – Design what a program will look like and what it will do.

Command - A single instruction in a computer program.

Control - These commands determine whether parts of the program will run, how often and sometimes, when.

Debug - Looking for any problems in the code, fixing and testing them.

Design Mode - Used to create the look of a 2Code computer program when it is run.

Event –Something that causes a block of code to be run.

Execute – To run code

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 - A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run.

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.

Input - Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.

Output - Information that comes out of the computer

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.

Repeat - This command can be used to make a block of commands run a set number of times or forever.

Selection - This is a conditional/decision command. When selection is used, a program will choose a different outcome depending on a condition.

Sequence – This is when a computer program runs commands in order. In 2Code this can also include "repeat" or a timer.

Simulation - A model that represents a real or imaginary situation.

Timer - Use this command to run a block of commands after a timed delay or at regular intervals.

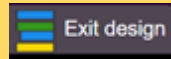
Variable – A named area in computer memory. A variable has a name and a value. The program can change this variable value.

Key Images

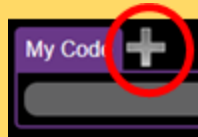
Open design mode in 2Code



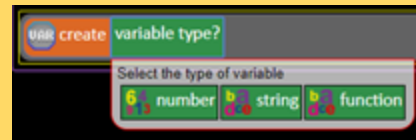
Switch to code mode in 2Code



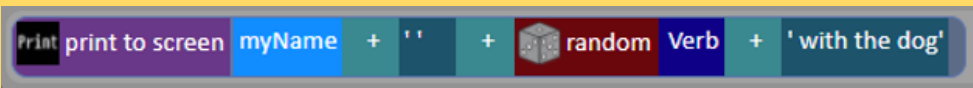
Add a new Tab to your code



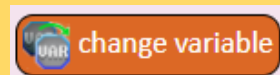
Creating a variable in 2Code Gorilla



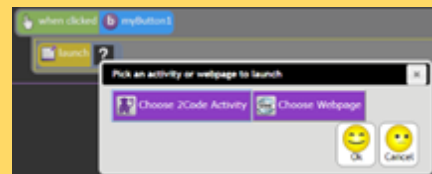
Example of combining variables and strings to print to the screen



A change variable block



The Launch command block



Key Questions

What are the design stages to create your own program?

- Design what you want your program to do and think about how it will do it
- Write the coding for your program
- Test your program. Look for bugs (what is the program supposed to do? What is the problem?)
- Debug- what do I need to do to fix it?
 - Retest (Does the program work now? If it doesn't do what it is supposed to do, what have I done wrong and how can I fix it?)

What does simulating a physical system mean?

Creating a program where the objects behave as they would in the real world. For example, a football program that uses angles, speed and friction to simulate kicking a football. When simulating a physical system, you first must break the system down into parts that can be coded (decomposition). The different parts will come together to make the full simulation.

Describe how you would use variables to make a timer countdown and a scorepad for a game.

Timer countdown: Create a timer variable and set it to the starting number of seconds. Add a Timer command that repeats and subtracts 1 every second. Add a text object in design view to display this number. Score: create a variable to store the score, each time the user gains a point, change and display the value of the variable.