Unit: 4.1 – Coding Knowledge Organiser

	Key Learning
Lesson 1: Y4-CS2; Y4-CS4	Design, Code, Test and Debug
Lesson 2: Y4-CS4; Y4-CS6	IF Statements
Lesson 3: Y4-CS3; CS4; CS5	Co-ordinates
Lesson 4: Y4-CS2; CS3; CS4	Repeat Until and IF/ELSE Statements
Lesson 5: Y4-CS2; CS4; CS5	Number Variables
Lesson 6: **Y4-CS1**; CS2; CS3; CS4;CS5;CS6	Making a Playable Game

Lesson 1:

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

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

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

Coding – The way programmers input instructions into computers to create programs

Command - A single instruction in a computer program.

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.

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.

Properties – All objects have properties that can be changed in design or by writing code e.g. image, colour and scale properties.

Lesson 2:

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

Sequence – When a computer program repeats a sequence of commands

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

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

Lesson 3:

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.

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

Lesson 4: **Variable** – A named area in computer memory. A variable has a name and a value. The program can change this variable value.

Lesson 5: **Execute** – To run code

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

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

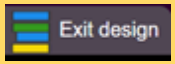
Get Input - This puts the text that a user types into the computer's temporary memory to be used to control the program flow.

Repeat until –Commands will run until a certain condition is met

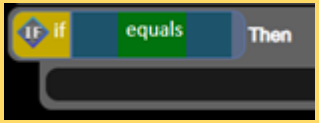
Key Images

Open design mode in 2Code

Switch to code mode in 2Code

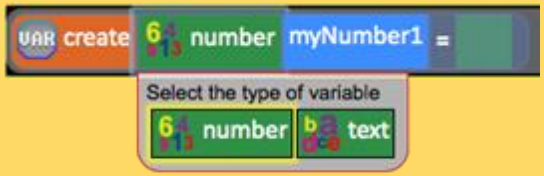


An 'if' command

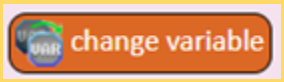


Repeat until command

Creating a variable in 2Code



A change variable block



Key Questions

What is the difference between the different object types in 2Code Gibbon level?

The different objects have different properties. This makes then suitable for different type of programs.

- Buttons can only be clicked and have their colour and text changed.
- Vehicles have speed and angle.
- Characters have movement in 4 directions
- Turtles have rotation, pen up and down.

What does selection mean in coding and how can you achieve this in 2Code?

The code will contain commands that require a decision and the next code to run will depend upon the outcome of this decision. In 2Code we used the 'if' command for selection.

How do you debug a code?

Think:

- What is the program supposed to do?
- What is the problem?
- What do I need to do to fix it?
- Does it work now?
- If it doesn't do what it is supposed to do, what have I done wrong and how