Unit: 4.1
Coding

Key Learning

- To use selection in coding with the 'if/else' command.
- To understand and use variables in 2Code.
- To use flowcharts for design of algorithms including selection.
- To use the 'repeat until' with variables to determine the repeat.
- To learn about and use computational thinking terms; decomposition and abstraction.
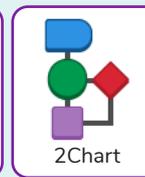
Key Resources

purple mash

Tools | 2Dos | 2Chart | Free code gibbon

Key Vocabulary

Action
Types of commands which are run on an object. They could be used to move an object or change a property.

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 Design
Design what your program will look like and what it will do.

Command
A single instruction in a computer program.

Debug/Debugging
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.

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

2simple
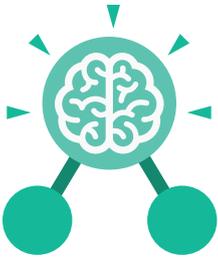
Unit: 4.1
Coding

Key Vocabulary

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 e.g. sound.

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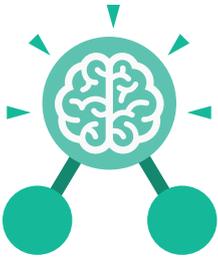
Simulation
A model that represents a real or imaginary situation.

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.

2simple

Unit: 4.1
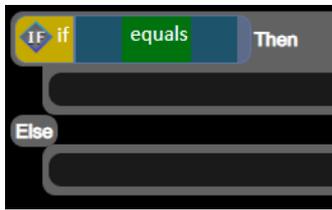## Coding

Key Images

Open design mode in 2Code.

Switch to code mode in 2Code.
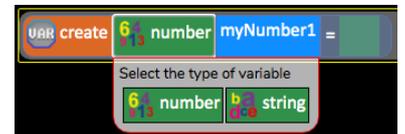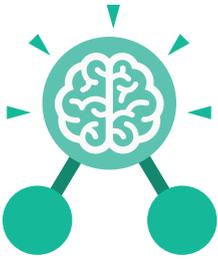

A change variable block.

An 'if/Else' command

Creating a variable in 2Code

Creating a variable in 2Code

Unit: 4.1
Coding

Key Questions

Explain the stages of the design, code, test, debug coding process.

This is a process to go through as you create a program using coding
- Design: Create a design which could be a flowchart, a labelled diagram or a storyboard. This helps to think through the algorithms required
- Code: code the algorithms usbng9in and adapting the design.
- Test and Debug: see if the program works and fix any errors.

How can variables and if/else statements be useful when coding programs with selection?

The variable could be set either to 0 or 1 and this could be changed by user action or a timer. If/else statement outcomes could depend upon the value of the variable. command for selection.

What do the terms decomposition and abstraction mean. Use examples to explain them.

Decomposition 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.
Abstraction 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.

2simple