

## Unit: 3.1 Coding

### Key Learning

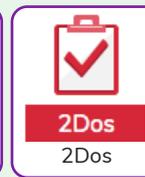
- To design algorithms using flowcharts.
- To design an algorithm that represents a physical system and code this representation.
- To use selection in coding with the 'if' command.
- To understand and use variables in 2Code.
- To deepen understanding of the different between timers and repeat commands.

### Key Resources

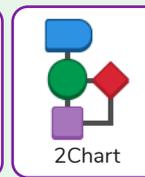
**purple  
mash**



Tools



2Dos  
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.

#### Code block

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

#### Control

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

#### Algorithm

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

#### Code Design

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

#### Debug/Debugging

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

#### Bug

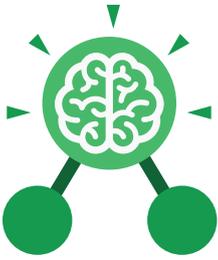
A problem in a computer program that stops it working the way it was designed.

#### Command

A single instruction in a computer program.

#### Design Mode

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



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#### Key Vocabulary

##### Event

Something that causes a block of code to be run.

##### If

A conditional command. This tests a statement. If the condition is true, then

##### 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.

##### Properties

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

##### Repeat

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

##### Computer Simulation

A program that models a real-life situation.

##### Selection

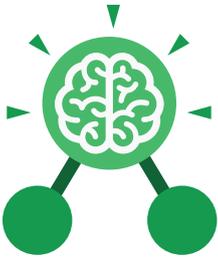
This is a conditional/decision command. When selection is used, a program will choose a different

##### 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.



## Unit: 3.1

### Coding

#### Key Images



Open, close or share a file.



Save your work.



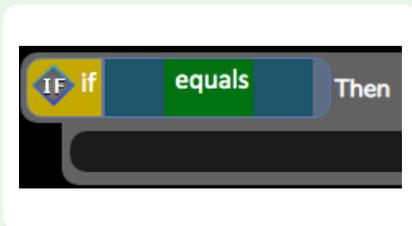
Design

Open design mode in 2Code.

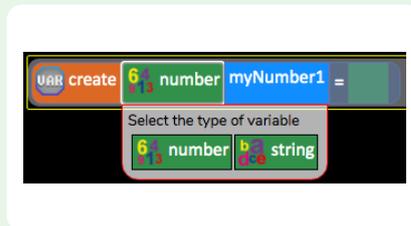


Exit Design

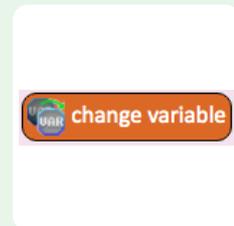
Switch to code mode in 2Code.



An 'if' 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 them suitable for different types 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.

**Give an example of how you could use a variable in coding.**

Some examples are:

- A timer that counts every second and displays the value.
- A value that changes depending upon whether a switch is on or off.
- Storing how many times a user has clicked on an object.