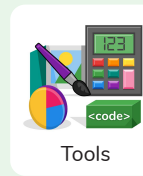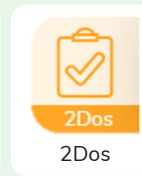# Unit: 3.1
## Coding

## Key Learning

- To understand what a flowchart is and how flowcharts are used in computer programming.
- To understand that there are different types of timers and select the right type for purpose.
- To understand how to use the repeat command.
- To understand the importance of nesting.
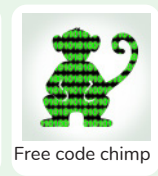- To design and create an interactive scene.

## Key Resources

purple mash

| Tools | 2Dos | 2Chart | Free code chimp |
| --- | --- | --- | --- |

## 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.

**Background**
The part of the program design that shows behind everything else. It sets the scene for the story or game.

**Blocks of Command**
A series of a few code instructions.

**Button**
An object that can trigger an event in response to being clicked.

**Collision Detection**
Detecting when two characters on the screen touch each other.

**Command**
A single instruction in a computer program.

**Debug/Debugging**
Looking for any problems in the code, fixing and testing them.

**Develop**
The process of designing programs and writing code.

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

**Execute**
To run a computer program.

**Flowchart**
A diagram which represents an algorithm.

**Nesting**
When you write a command inside something else e.g. a block of commands could be nested inside a timer.

2simple

# Unit: 3.1
## Coding

## Key Vocabulary

**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.

**Output**
Information that comes out of the computer e.g. sound.

**Plan**
Set out what you would like the program to do before it is written.

**Predict**
Say what you think will happen when a piece of code is run.

**Procedure**
A set of coded instructions that perform a certain task.

**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.

**Sequence**
when a computer program runs commands in order.

**Scene**
A visual aspect of a program.

**Sound**
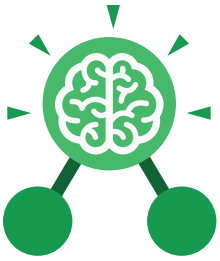This is a type of output command that makes a noise.

**Test**
When code is run to check that it works correctly.

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

**Values**
Usually a number, a single character or a string of characters.

2simple

# Unit: 3.1
## Coding

## Key Images

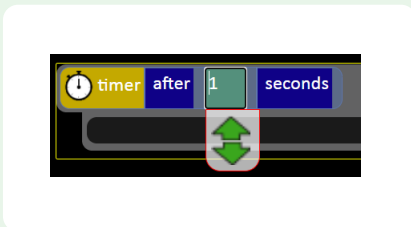Open, close or share a file.

Save your work.
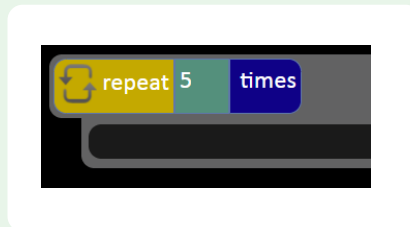
Design

Open design mode in 2Code.

Exit Design

Switch to code mode in 2Code.

A timer code block.

Repeat block.

## Key Questions

### Why is it useful to use a flowchart to design a computer program?

Using a flowchart to design a computer program is helpful as you can see it in its simplest form as inputs and outputs. You can see where the program is going which will prevent mistakes when creating the code.

### What does repeat mean in computer programming?

Using the repeat command will make a block of commands run for a set number of timers or forever. These saves rewriting the code many times.

### What is the difference between 'timer after' and 'timer every'?

A 'timer after' means after a certain amount of seconds, the action will occur. 'Timer every' means that the action will re-occur every certain amount of seconds on a loop.

2simple