# Unit: 2.1
## Coding

## Key Learning

- To understand what an algorithm is.
- To create a computer program using an algorithm.
- To create a program using a given design.
- To understand the collision detection event.
- To understand that algorithms follow a sequence.
- To design an algorithm that follows a timed sequence.
- To understand that different objects have different properties.
- To understand what different events do in code.
- To understand the function of buttons in a program.
- To understand and debug simple programs.

## Key Resources

**purple mash**
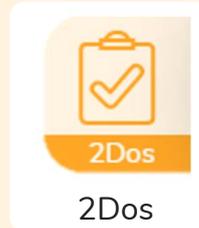
**2Dos**
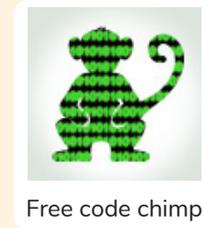
**Free code chimp**

**Tools**

## Key Vocabulary

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

### 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.

### Button
An object on the screen which can be clicked on.

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

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

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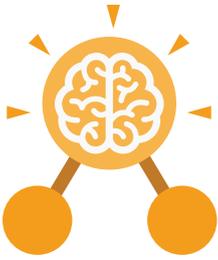Used to create the look of a 2Code computer program when it is run.

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

### Key Pressed
Pushing down a key on the device's keyboard.

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

**2 simple**

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## Key Vocabulary

**Object**
An element in a computer program that can be changed using actions or properties.

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

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

**Run**
To cause the instruction in a program to be carried out.

**Scale**
The size of an object in 2Code.

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

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

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

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

**Text**
Typed letters on the screen.

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

**When clicked/swiped**
An event command. It makes code run when you click or swipe on something (or press/swipe your finger on a touchscreen).

## Key Questions

**What is an algorithm? Why is it useful in coding?**

An algorithm is a step-by-step set of instructions used to solve a problem or achieve an objective.
A clear algorithm can help you to create code that does what it is supposed to do.

**Why is it important to know there are different object types?**

Different object types can do different actions. For example, in 2Code, an animal object can do actions such as up, down and stop. A turtle goes forward, backward, pen down and pen up.

**If you are good at coding, you don't need to debug. Is this true?**

All coders need to debug to make sure that their program works correctly, and the code does what they intended. As you get better at coding, your programs will get more complex and debugging gets even more important.
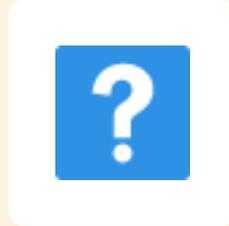
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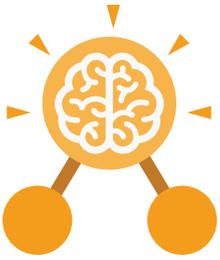
# Unit: 2.1
## Coding
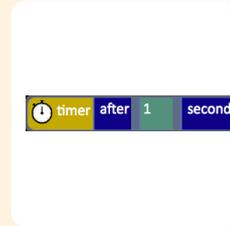
### Key Images

Open, close or share a file.

Save your work.

Watch the instruction video.

Design

Open design mode in 2Code.

Exit Design

Switch to code mode in 2Code.

timer after 1 seconds

A timer code block.

right

An object property.

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