# 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.
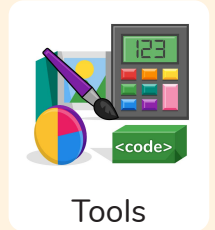- To understand and debug simple programs.

Key Resources

purple mash
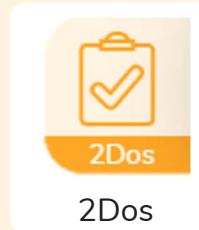
2Dos
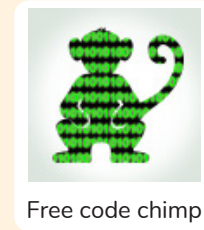
Free code chimp

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.

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

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

Character
A type of object in 2Code that can be programmed to change actions or properties.

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

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

Command
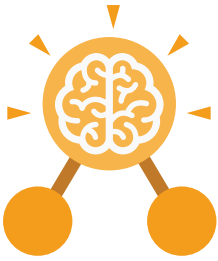A single instruction in a computer program.

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.

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Unit: 2.1
Coding

Key Vocabulary

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

Input
Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.

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

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

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

Scale
The size of an object in 2Code.

Sequence
When a computer program runs commands in order.

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).

When Key
An event command. It makes code run when you press the specified key on the keyboard.

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.

Whys 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.
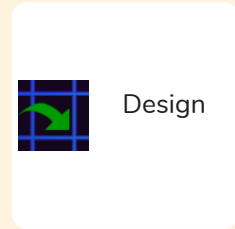
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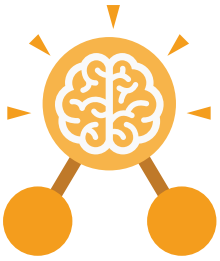
Unit: 2.1
Coding
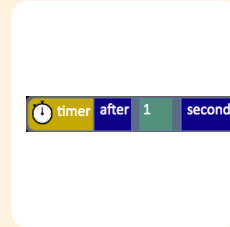
Key Images

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.

A timer code block.

right

An object property.

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