# Unit: 6.1
Coding

Key Learning

- To design a playable game with a timer and a score.
- To plan and use selection and variables.
- To understand how the launch command works.
- To use functions and understand why they are useful.
- To understand how functions are created and called.
- To use flowcharts to create and debug code.
- To create a simulation of a room in which devices can be controlled.
- To understand how user input can be used in a program.
- To understand how 2Code can be used to make a text-adventure game.

Key Resources

purple mash
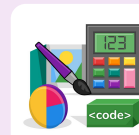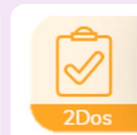
| Tools | 2Dos | 2Chart | Free code gorilla |

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.

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

Called
A line of code that triggers a function to be executed.

Command
A single instruction in a computer program.

Co-ordinates
Numbers which determine the position of a point, shape or object in a particular space.
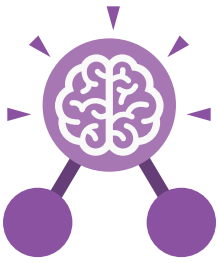
Debug/Debugging
Looking for any problems in the code, fixing and testing them.

Decomposition
A method of breaking down a task into manageable components. This makes coding easier as the components can then be coded separately and then brought back together in the program.

Developer
A person who writes, debugs and executes code to create a program.

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Key Vocabulary

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

Flowchart
A diagram which represents an algorithm.

Function
A block or sequence of code that you can access when you need it, so you don't have to rewrite the code repeatedly Instead, you simply 'call' the function each time you want it.

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

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.

Launch Command
A command that launches another program within the existing program.

Number Variable
A variable that is numerical.

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

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.

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.

Prompt
A question or request asked in coding to obtain information from the user in order to select which code to run.

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.

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

Scene
A visual aspect of a program.

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.

String
A sequence of characters, which could form words, phrases or even whole sentences.

Tab
In 2Code, this is a way to organise a program into separate pages (tabs) of code.
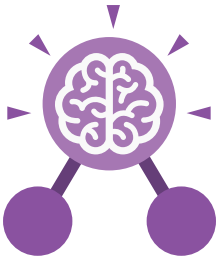
Timer
Use this command to run a block of commands after a timed delay or at regular intervals.

User Input
When a program requires an input from a user such as a click or text from a keyboard.

Variable
A named area in computer memory. A variable has a name and a value. The program can change this variable value.

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Key Images

 Design

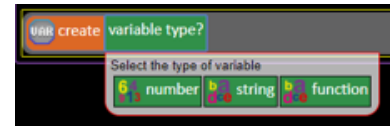Open design mode in 2Code.

 Exit Design

Switch to code mode in 2Code.

 change variable

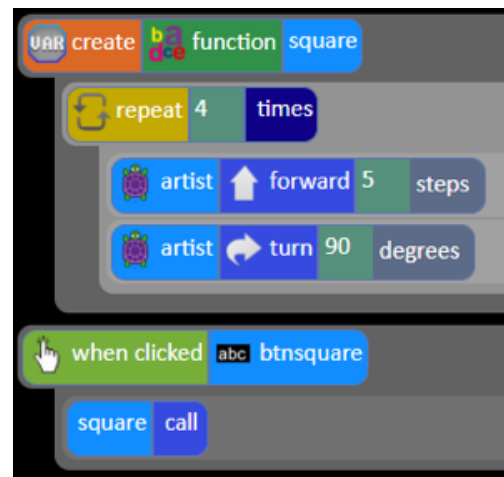A change variable block.

Example of combining variables and strings to print to the screen
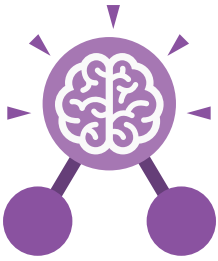

Creating a variable in 2Code

Add a new Tab to your code or move code blocks between tabs

A function called 'square' that is called by clicking on a button called btnSquare.

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Key Questions

How can you use Tabs in 2Code Gorilla?

Tabs are used to organise you code and make it more readable. This also makes it easier to debug. Give the Tabs useful names to help with this.

What is a function in coding? Give an example that you have used in 2Code Gorilla.

A function is a block of code that you can access when you need it, so you don't have to rewrite the same block repeatedly. You call the function each time you want it. In a turtle program you could have a button that will make the turtle draw a square each time you click it. In the text adventure, there were functions for each room that were called when the user navigated to the room.

In 2Code Gorilla, how can a program receive user input?

When the user clicks on an object, when the user presses keys or swipes the screen with the mouse, the 'Get Input' and 'Prompt for input' commands.
On a touchscreen: when the screen is touched or swiped.

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