



Year 6 Coding

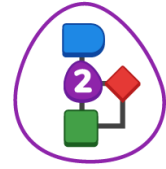
Key Learning

- To understand ways to use cloning in 2Code.
- To explore the use of hotspots in 2Code.
- To understand the different options of generating user input in 2Code.
- To use flowcharts to test and debug a simulation.
- To use program design documentation to produce a program.
- To understand how 2Code can be used to make a text-based adventure game.

Key Resources

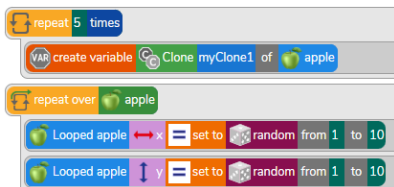


2Code

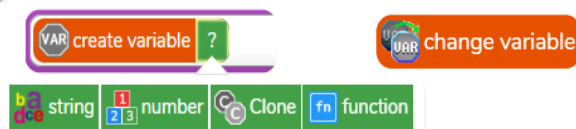


2Chart

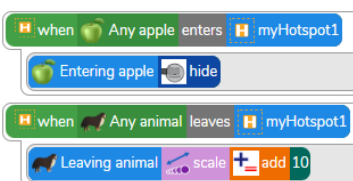
Key Images



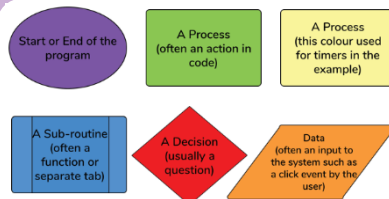
Using clones



Variables



Using hotspots



Flowchart symbols



Functions

Key Questions

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.

What variable types can you create in 2Code?

String, number and cloned object. The system also creates variables using object tabs such as 'any vehicle'.



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Key Vocabulary

Abstraction

A way of decluttering and removing unnecessary details in order to code the main task of the program.

Action

A type of command which causes an object to alter its behaviour. Actions could be used to move an object or change an attribute.

Algorithm

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

Attribute

A detail about an object in a program that can be changed. For example, its name, scale or position.

Clone

A variable type that makes exact copies of an object.

Concatenation

The action of linking things together in a series.

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.

Event

Something that happens in a program that causes a block of code to be run. Events include 'When Clicked', 'When Key' and 'When Swiped'.

Flowchart

A diagram that uses specifically shaped, labelled boxes and arrows to represent an algorithm.

Function

A named group of commands that a program can run when called by name, reducing the need to rewrite code repeatedly.

Hotspot

A type of object that can be used to make a specific area of the screen react to actions such as objects entering or leaving the area.

Initialize

Setting the starting value for a variable.

Object

An item in a program that can be given instructions to move or change in some way (carry out an action).

Prompt

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



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Random

Generating values that are unpredictable within a specified range or set. In programming, this is used to introduce variability and unpredictability into the code's behaviour.

Repeat

This command can be used to make a block of commands run a set number of times, forever or until a condition is met (repeat until).

Repeat Over

A command which repeats commands nested within it continuously as a loop.

Selection

A decision command. When selection is used, a program will choose which bit of code to run depending on a condition.

Sequence

When a computer program runs commands in order.

Simulation

A model that represents a real or imaginary situation. Simulations can be used to explore options and to test predictions.

String

Text or a combination of text characters and numbers: A sequence of characters, which could form words, phrases or sentences.

Sub-routine

A mini program inside a bigger program that does one job.

Tag Attribute

A word attribute given to objects so that code can be written for multiple objects at once to write efficient code.

Text-Based Adventure

A computer game that uses text instead of graphics.

Timer

In coding, use a timer command to run a block of commands at regular intervals.

Tinker

To experiment with code, tools or ideas by making small changes, testing outcomes, and learning from experimentation or trial and error.

User Interface (UI)

The part of a computer program that you see and use on the screen. It is everything that helps the user tell the computer what to do and shows the user what the computer is doing.

Variable

A named area in computer memory. A variable has a name and a value. The program can change this variable value. Variables are used in programming to keep track of things that can change while a program is running.