

Year 5: Coding

Coding

Simulating a physical environment means to create a program where the objects behave as they would in the real world. For example, a football program that uses angles, speed and friction to simulate kicking a football. When simulating a physical system, you first must break the system down into parts that can be coded (decomposition). The different parts will come together to make the full simulation.

Variables can be used to make a timer countdown and a scorepad for a game. You can create a timer variable and set it to the starting number of seconds. Add a Timer command that repeats and subtracts 1 every second. Add a text object in design view to display this number. You can also create a variable to store the score, each time the user gains a point, change and display the value of the variable.

What you will learn by the end of the unit:

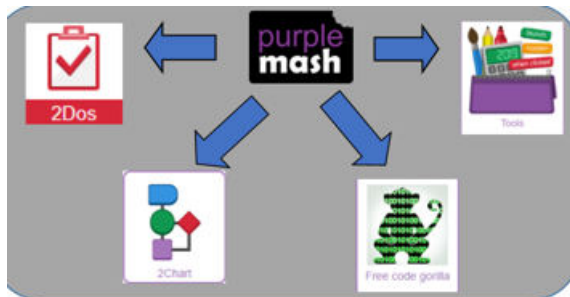
To represent a program design and algorithm.

To create a program that simulates a physical system using decomposition.

To explore string and text variable types so that the most appropriate can be used in programs.

To use the Launch command in 2Code Gorilla

Key Resources



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.
Bug	A problem in a computer program that stops it working the way it was designed.
Code Design	Design what your program will look like and what it will do. Coder—A person who writes computer code.
Command	A single instruction in a computer program
Debug/ Debugging	Looking for any problems in the code, fixing and testing them.
Design mode	Used to create the look of a 2Code computer programme when it is run.
Event	Something that causes a block of code to be run.
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	A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run.
If/Else	A conditional command. This tests a statement. If the condition is true, then the commands inside the block will be run. If the condition is not met, then the commands inside the 'else block' are 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 for properties.
Repeat	This command can be used to make a block of commands run a set number of times or forever.
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.
Timer	Use this command to run a block of commands after a timed delay or at regular intervals.
Variable	A named area in computer memory. A variable has a name and a value. The program can change this variable value.

Year 5: Spreadsheets

Spreadsheets

You can use a formula so that the cell shows the product of two other cells by clicking on the cell where you want the product to be displayed then click the formula wizard button. Click on the cell that contains the first number. Choose the x operation then click on the second number. Click OK.

You can add a formula to a cell that automatically calculates the number of days since a certain date by using formulae and the totalling tools. To make the spreadsheet easier to understand, you could use named variables.

A spreadsheet model can be used to represent the data of a situation, for example budgeting for a party, working out how big a field needs to be for a certain number of animals, working out how to spend your pocket money over time.

What you will learn by the end of the unit:

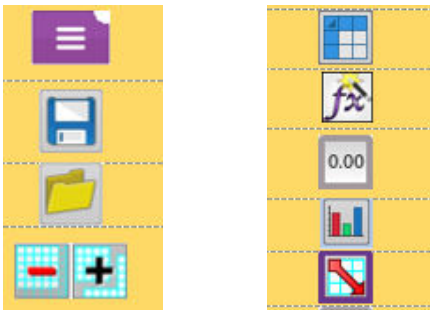
Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell.

To copy and paste within 2Calculate.

Using 2Calculate tools to test a hypothesis.

To add a formula to a cell to automatically make a calculation in that cell.

Key Images



Vocabulary

Average	Symbols used to represent comparing two values.
Advance Mode	A mode of 2Calculate in which the cells have references and can include formulae
Copy and Paste	A way to copy information from the screen into the computer's memory and paste it elsewhere without re-typing.
Columns	Vertical reference points for the cells in a spreadsheet.
Cells	An individual section of a spreadsheet grid. It contains data or calculations.
Charts	Use this button to create a variety of graph types for the data in the spreadsheet.
Equals Tool	Tests whether the entered calculation in the cells to the left of the tool has the correct answer in the cell to the right of the tool.
Formula	Use the formula wizard or type into the formula bar to create a formula in a cell, this will calculate the value for the cells based upon the value of other cells in the spreadsheet
Formula Wizard	This wizard guides you in creating a variety of formulae for a cell such as calculations, totals, averages, minimum and maximum for selected cells.
Move cell tool	This tool makes a cell's contents moveable by drag-and-drop methods
Random tool	Click to give a random value between 0 and 9 to the cell.
Rows	Vertical reference points for the cells in a spreadsheet.
Spin Tool	Clicking on this in a cell will increase or decrease the value in a cell to the right by 1.
Spread-sheet	A computer program that represents information in a grid of rows and columns.
Timer	When placed in the spreadsheet, click the timer to add 1 to the value of the cell to its right every second until it is clicked again.