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.

Unit: 6.1 Coding

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.

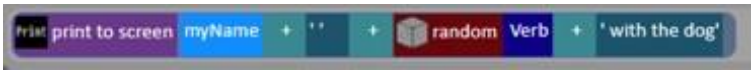
Unit: 6.1
Coding

Key Images

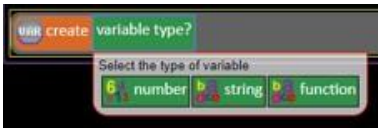
Open design mode in 2Code.

Switch to code mode in 2Code.

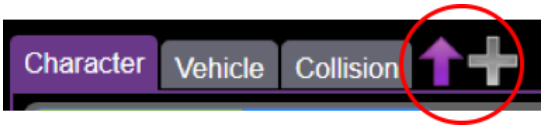
A change variable block.



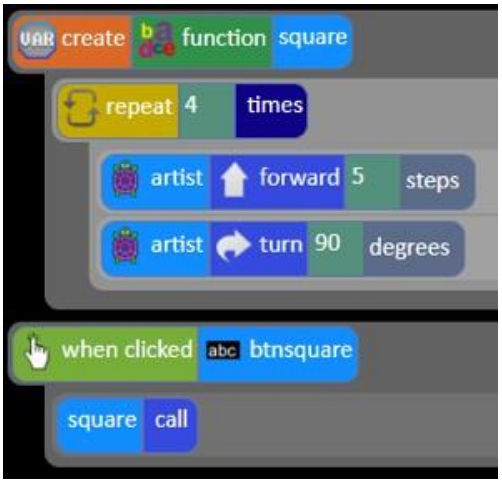
Example of combining variables and strings to print to the screen



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.

Unit: 6.1
Coding

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.

Unit: 6.6
Networks

Key Learning

- To learn about what the Internet consists of.
- To find out what a LAN and a WAN are.
- To find out how the Internet is accessed in school.
- To research and find out about the age of the Internet.
- To think about what the future might hold.

Key Resources

purple mash

Tim Berners- Lee Profile

Communication Questionnaire

Key Vocabulary

Internet
A global computer network providing a variety of information and communication facilities consisting of interconnected networks using standardized communication protocols.

World Wide Web
An information system on the Internet which allows documents to be connected to other documents by hypertext links, enabling the user to search for information by moving from one document to another.

Network Several interconnected computers, machines, or operations.

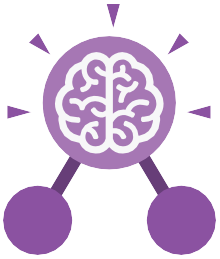
Local area network (LAN)
A computer network that links devices within a building or group of adjacent buildings, especially one with a radius of less than 1 km.

Wide area network (WAN)
A computer network in which the computers connected may be far apart, generally having a radius of more than 1 km.

Router
A device which forwards data packets to the appropriate parts of a computer network.

Network cables
Used to connect and transfer data and information between computers and routers.

Wireless
The ability to transmit data from one device to another without using wires.



Unit: 6.6
Networks

Key Questions

What is the difference between the Internet and the World Wide Web?

The Internet is a global network of networks while the Web, also referred formally as the World Wide Web (www) is collection of information which is accessed via the Internet.

What is the difference between a LAN and a WAN?

Both are networks that connect computers together. A LAN (Local Area Network) is normally for computers connected less than 1KM distance, whilst a WAN (Wide Area Network) extends over a large geographical area.

Who is Tim Berners-Lee?

Tim Berners-Lee is the inventor of the World Wide Web. The WWW is the system that delivers webpages over the internet.

Unit: 6.9
Spreadsheets with Google Sheets

Key Learning

- To know what a spreadsheet looks like.
- To navigate and enter data into cells.
- To introduce some basic data formulae for percentages, averages and max and min numbers.
- To demonstrate how the use of spreadsheets can save time and effort when performing calculations.
- To use a spreadsheet to model a situation.
- To demonstrate how a spreadsheet can make complex data clear by manipulating the way it is presented.
- To create a variety of graphs in sheets.
- To apply spreadsheet skills to solving problems.

Key Resources

Google Sheets

Key Questions

What is a spreadsheet used for?

Spreadsheets are used to display, organise and interpret information. They are easy to manipulate and carry out useful calculations quickly.

How do you carry out a multiplication calculation?

Within the formula bar for the cell, you will need to write = then the cells you want to multiply using the operator *. For example, =A1*B1 will show the answer of A1 multiplied by B1. You can change the contents of A1 or B1 and this will change your answer.

How does using the SUM function save time?

Using the SUM function allows you to add together the total of many cells without having to write them all out. For example, it is easier to write =SUM(A1:A6) rather than = A1+ A2+ A3+ A4+ A5+ A6.

Unit: 6.9
Spreadsheets with Google Sheets

Key Vocabulary

Alignment
How the contents of a cell is lined up and arranged.

Calculate
A spreadsheet's ability to complete calculations in a cell by using the = sign.

Cell
Each box on a spreadsheet is a cell. It can contain a variety of data such as letters, numbers, symbols and calculations.

Cell reference
The letter and number combination which shows a cells location on the page.

Chart
A tool which is used to display information in a form of a graph.

Column
The letter labelled columns going vertically down the sheet.

Formula(e)
A group of letters, numbers, or other symbols which represent a mathematical rule. It allows a spreadsheet to carry out calculations.

Function
Ready-made mathematical formulae which help you quickly carry out calculations.

Range
A collection of selected cells: all the numbers you want to appear in a calculation. For example, A1:A12 includes all the cells from A1 to A12.

Row
The numbered rows going horizontally across the sheet.

Spreadsheet
The main part of the page of a software tool used to organise information.

Style
How the contents of a cell is presented.

Sum
A function which adds together the totals in a range of cells.

Text Wrapping
This displays the cells contents on multiple lines rather than one long line, allowing all the contents to be shown.

Value
What the data in a cell represents. This could be certain text e.g. blue/green, a date, or a number.

Workbook
A file can contain more than one 'sheet'. The complete file is called a spreadsheet workbook.

Unit: 6.9
Spreadsheets with Google Sheets

Key Images

Open a new document

Access sharing options

Return to Sheets home

Undo key

Text formatting

Number Format

Borders

Text Wrapping

Insert chart

Create a filter

Add a new sheet

Need more support? Contact us:
Tel: +44(0)208 203 1781 | Email: support@2simple.com | Twitter: @2simplesoftware

Unit: 6.9
Spreadsheets with Microsoft Excel

Key Learning

- To know what a spreadsheet looks like.
- To navigate and enter data into cells.
- To introduce some basic data formulae in Excel for percentages, averages and max and min numbers.
- To demonstrate how the use of Excel can save time and effort when performing calculations.
- To use a spreadsheet to model a real-life situation.
- To demonstrate how Excel can make complex data clear by manipulating the way it is presented.
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- To apply spreadsheet skills to solving problems.

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Unit: 6.9
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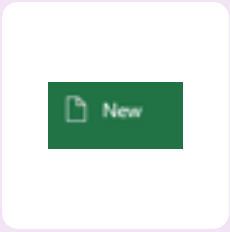
Beit Shvidler Computing Scheme of Work: Knowledge Organisers

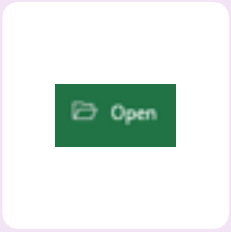
Unit: 6.9

Spreadsheets with Microsoft Excel

Key Images



Open a new document



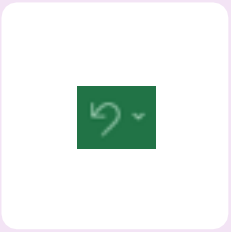
Open an existing document

Save your work

Home tab where many editing tools are found

Font Category

Formula Bar

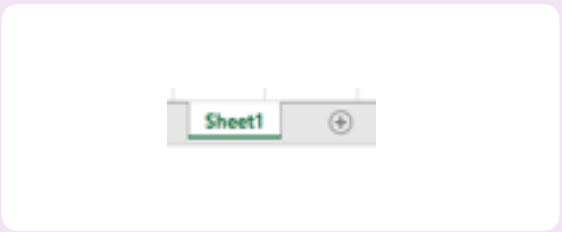


Undo key

Insert tab where you can add in tables, illustrations and links

Insert cells

Text Wrapping



Formula Bar