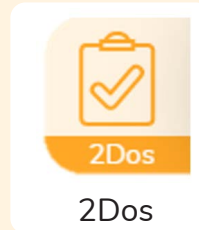


Unit: 2.1 Coding

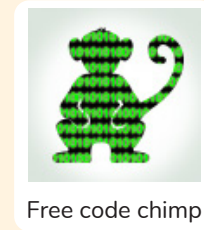
Key Learning

- 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.

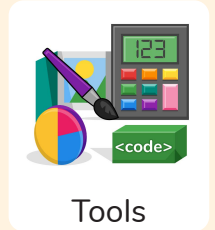
Key Resources



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.

Bug

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

Collision detection

In 2Code, this measures whether 2 objects have touched each other.

Algorithm

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

Button

A type of object that responds to being clicked on.

Command

A single instruction in 2Code.

Event

An occurrence that causes a block of code to be run. The event could be the result of user action such as the user pressing a key or clicking the screen.

Background

In 2Code the background is an image in the design that does not change.

Click events

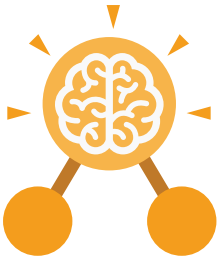
An event that is triggered when the user clicks on an object.

Debug / Debugging

Fixing code that has errors so that the code will run the way it was designed to.

Execute

This is the proper word for when you run the code. We say, 'the program (or code) executes.'



Unit: 2.1

Coding

Key Vocabulary

Implement

When a design is turned into a program using coding.

Instructions

Detailed information about how something should be done or operated.

Interaction

When objects perform actions in response to each other e.g. a frog turning into a monkey when it collides with a tree.

Interval

In a timer, this is the length of time between the timer code running and the next time it runs e.g. every 1 second.

Object

Items in a program that can be given instructions to move or change in some way (action).

Output

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

Properties

These determine the look and size of an object. Each object has properties such as the image, scale and position of the object.

Run

Clicking the Play button to make the computer respond to the code.

Key Questions

What is an algorithm? Why is it useful in coding?

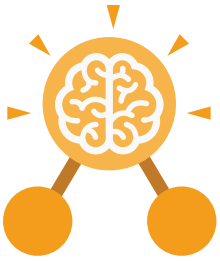
An algorithm is a step-by-step set of instructions used to solve a problem or achieve an objective.
A clear algorithm can help you to create code that does what it is supposed to do.

Why 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.



Unit: 2.1

Coding

Key Images



Open, close or share a file.



Save your work.



Watch the instruction video.



Open design mode in 2Code.



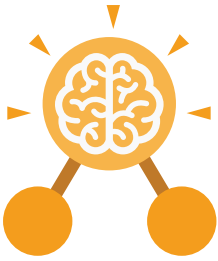
Switch to code mode in 2Code.



A timer code block.



An object property.



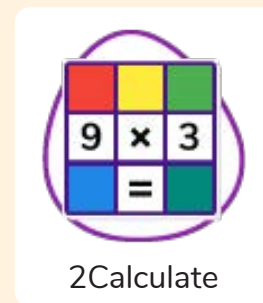
Unit: 2.3

Spreadsheets

Key Learning

- To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine.
- To learn how to copy and paste in 2Calculate.
- To use the totalling tools.
- To use a spreadsheet for money calculations.
- To use the 2Calculate equals tool to check calculations.
- To use 2Calculate to collect data and produce a graph.

Key Resources



Key Questions

Why would you copy and paste when using a spreadsheet?

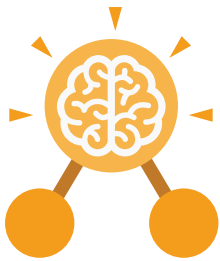
You might want to rearrange the information in the spreadsheet. It will save you entering the same information many times if you want to repeat things in different cells.

How could a spreadsheet help you when you are planning some shopping?

You could use it to store the process and work out how much it would cost to buy the things that you wanted.

Look at the graph made in 2Calculate showing the class' favourite pets. Which is the most popular?

			Jan		
	Ming		Maia		
	Meer		Katie		Noah
Leonard	Zack		Oscar	Mohammed	Casey
Petra	Jay	Harriet	Ishaq	Rina	Eve
		Favourite	Pets		



Unit: 2.3

Spreadsheets

Key Vocabulary

Block Graph

This is a type of graph that displays data with blocks. These can be made using cells, colours and labels in 2Calculate.

Copy

This feature copies the contents of highlighted cells without deleting the contents of them into a clipboard.

Drag

Contents of a cell can be dragged to another cell using the drag tool in 2Calculate.

Label

A way to identify data in a spreadsheet. For example a label heading for ice cream flavours children like.

Table

Tables can be created in 2Calculate, these have headings and are a neat way to display data.

Cell

An individual section of a spreadsheet grid. It contains data or calculations.

Count tool

In 2Calculate, this counts the number of cells with a value of the cell to the left of the tool.

Equals

This symbol can be used in 2Calculate to find the answer to a calculation.

Row

Boxes running horizontally in a spreadsheet.

Total

In 2Calculate the total tool will calculate the total of all cells above, below or next to it dependent on which total tool used.

Column

Boxes running vertically in a spreadsheet.

Data

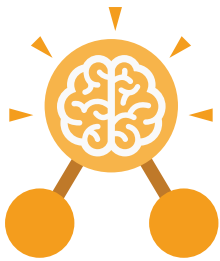
A collection of information, used to help answer questions.

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.

Speak tool

This tool will speak the contents of a cell containing a number each time the value changes.



Unit: 2.3

Spreadsheets

Key Images



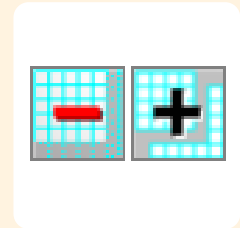
Open, close or share a file



Save your work



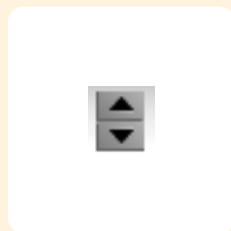
Open a previously saved file



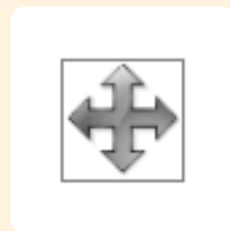
Increase or decrease spreadsheet size



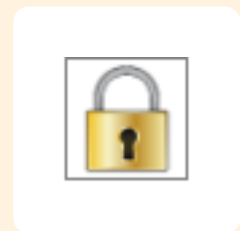
The 2Calculate toolbox



The 2Calculate control toolbox



Move cell tool



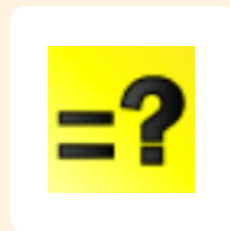
Lock cell tool



Speak tool



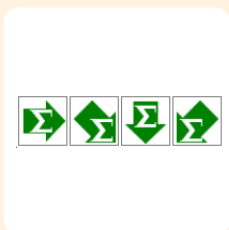
Count tool



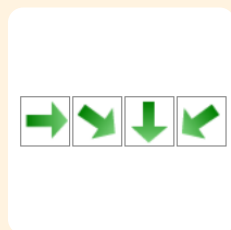
Equals



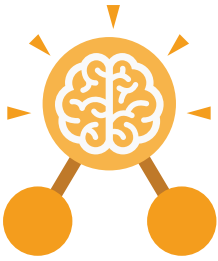
2Calculate totalling toolbox



Totalling



Copying



Unit: 2.4

Questioning

Key Learning

- To learn about data handling tools that can give more information than pictograms.
- To use yes/no questions to separate information.
- To construct a binary tree to identify items.
- To use 2Question (a binary tree database) to answer questions.
- To use a database to answer more complex search questions.
- To use the Search tool to find information.

Key Resources



2Count



2Investigate



2Question

Key Vocabulary

Binary Tree

A simple way of sorting information into two categories.

Data

A collection of information, used to help answer questions.

Database

A computerised system that makes it easy to search, select and store information.

Field

A single piece of data in a database which makes up a record.

Pictogram

A diagram that uses pictures to represent data.

Question

A sentence written or spoken to find information.

Record

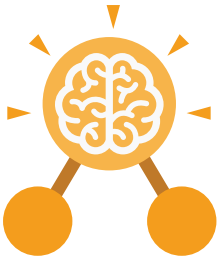
An item in a database with a variety of information about a specific entry.

Search

Looking for specific information. On a database, you can use the 'Find' tool.

Sort

Put things together by features they have in common.



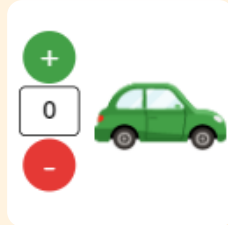
Unit: 2.4

Questioning

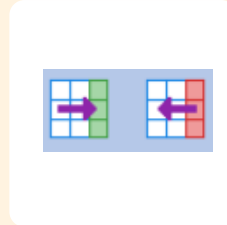
Key Images



Open, close or share information



Enter data into a pictogram



Add or delete columns in a pictogram



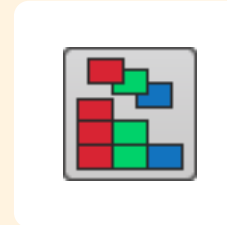
Add a question to sort the information in a binary tree



Give a name to the binary tree



Find information in a database



Sort, group and arrange information in a database

Key Questions

How does a Pictogram show information?

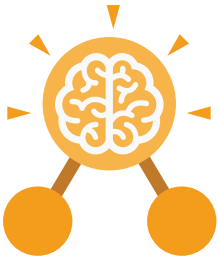
On a pictogram, data is represented by pictures. Pictograms are set out in the same way as bar charts, but instead of bars they use columns of pictures to show the numbers involved.

How is information organised in a binary tree?

On a binary tree information is organised through a series of questions that can only be answered 'yes' or 'no'. Eventually only one item is left in the category which forms the end of a branch of the binary tree.

How can a database help organise information?

A database is a way of storing information in such a way that it can easily be searched. Databases are designed to hold lots of information that would be difficult to search without using a computer.



Unit: 2.5

Effective Searching

Key Learning

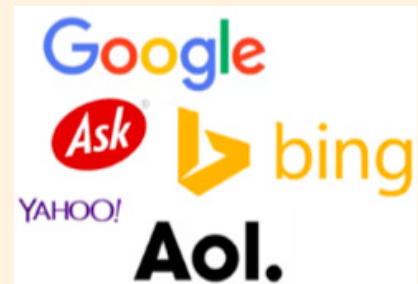
- To understand the terminology associated with searching.
- To gain a better understanding of searching on the Internet.
- To create a leaflet to help someone search for information on the Internet.

Key Questions

How can I search the Internet?

The easiest way to search the Internet is using a search engine. The search engine crawls the Internet looking for answers to the search enquiry. Google is a popular search engine.

Key Resources



Key Vocabulary

Digital Footprint

The information about a person that exists on the Internet as a result of their online activity.

Domain

Part of the Internet owned by an individual, company or organisation.

Internet

A way to send information from one computer to another anywhere in the world using technology such as phones, satellites and radio links.

Network

Connected devices that can send and receive information, voice and video.

Search Engine

A program to help you find web pages on the Internet.

Web Address

Identifying address for a file or web page on the Internet. Also known as URL.

Web Page

A single page which can include images, videos and charts.

World Wide Web

The web pages and documents you see when you are browsing online. It is just one part of the Internet.

Web Site

A collection of web pages that belong to one domain.