

Unit: 3.1

Coding

Key Learning

- To understand what a flowchart is and how flowcharts are used in computer programming.
- To understand that there are different types of timers and select the right type for purpose.
- To understand how to use the repeat command.
- To understand the importance of nesting.
- To design and create an interactive scene.
-

Key Resources



Tools



2Dos



2Chart



Free code chimp

Key Vocabulary

Action

The way that objects change when programmed to do so. For example, move 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

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

Bug

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

Button

A type of object that responds to being clicked on.

Click Event

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

Code

Writing the code for a computer program.

Collision Detection Event

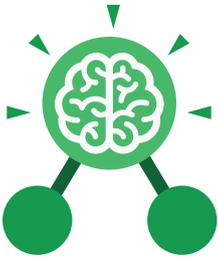
The event of two objects colliding.

Command

A single instruction in a computer program.

Debug/Debugging

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



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Coding

Key Vocabulary

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 (**when Key**) or clicking or swiping the screen (**when Clicked**, **when Swiped**). In 2Code, the event commands are used to create blocks of code that are run when events happen.

Nesting

When coding commands are put inside other commands. These commands only run when the outer command runs.

Properties

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

Sequence

When a computer program runs commands in order.

Turtle Object

A type of object in 2Code that moves by coding angles of rotation and distance to move.

Flowchart

A diagram which represents an algorithm.

Input

Information going into the computer. Can include moving or clicking the mouse, using the keyboard, swiping and tilting the device.

Object

Items in a program that can be given instructions to move or change in some way (action). In 2Code Gibbon, these include character, turtle, button, vehicle, animal, food, shape, number, input and label.

Repeat

This command can be used to make a block of commands run a set number of times or forever.

Test

To run the code and observe what happens to identify where there might be bugs in the program.

Implement

When a design is turned into a program using coding.

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.

Predict

Use your understanding of a situation to say what will happen in the future or will be a consequence of something.

Run

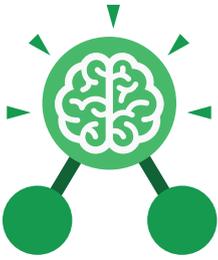
Clicking the Play button to make the computer respond to the code.

Scene

In 2Code, this is the combination of the background and objects in a program.

Timer

Use this command to run a block of commands after a timed delay or at regular intervals.



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Coding

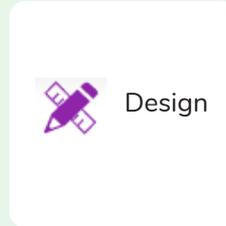
Key Images



Open, close or share a file.



Save your work.



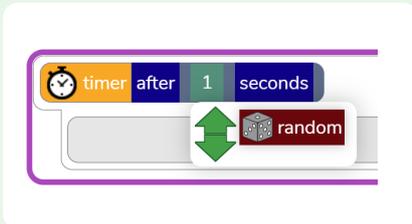
Design

Open design mode in 2Code.

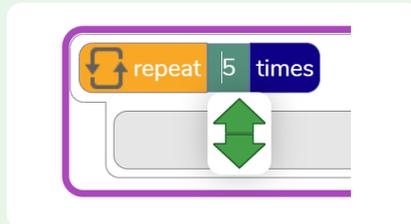


Exit Design

Switch to code mode in 2Code.



A timer code block.



Repeat block.

Key Questions

Why is it useful to use a flowchart to design a computer program?

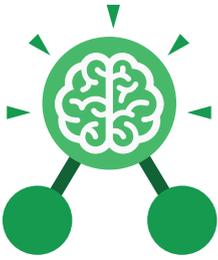
Using a flowchart to design a computer program is helpful as you can see it in its simplest form as inputs and outputs. You can see where the program is going which will prevent mistakes when creating the code.

What does repeat mean in computer programming?

Using the repeat command will make a block of commands run for a set number of times or forever. This saves rewriting the code many times.

What is the difference between 'timer after' and 'timer every'?

A 'timer after' means after a certain amount of seconds, the action will occur. 'Timer every' means that the action will re-occur every certain amount of seconds on a loop.



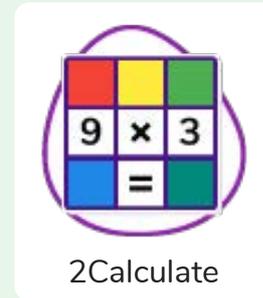
Unit: 3.3

Spreadsheets

Key Learning

- To use the symbols more than, less than and equal to, to compare values.
- To use 2Calculate to collect data and produce a variety of graphs.
- To use the advanced mode of 2Calculate to learn about cell references.

Key Resources



Key Questions

Explain how you would collect data to find out children's favourite school subjects. What sort of graph would you create?

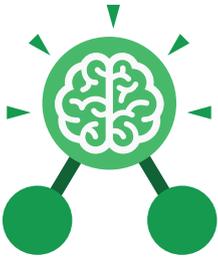
Label one column 'Subject' and list the subjects in this column. In the cells to the right put in the number of children who like this subject. Use the chart button to automatically create a chart. A pie chart would be a suitable choice.

How can you make a 3 times table machine using the spin tool? Could you use the equals tool to check your answer?

Put the spin tool in the left most cell of a row. Type 0×3 in the next three cells. Put an equals tool in the next cell in the row. When you spin the spin tool, the question will change. Enter the answer and the equals tool will tell you if it is correct.

Explain how you would locate a cell in the advanced mode?

Cells in advanced mode have rows labelled with numbers, and columns labelled with letters. So, each cell has a number and letter. For example, A1 or D7.



Unit: 3.3

Spreadsheets

Key Vocabulary

Advance mode

A mode of 2Calculate in which the cells have references and can include formulae.

Bar graph

A chart that uses bars to show quantities or numbers, so they can be easily compared.

Equals

This symbol shows that numbers or number sentences either side are equal in value.

Data

A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Cell Address

Every **cell** has an address. This can be found by reading the **column** letter then **row** number.

Rows

Boxes running horizontally in a spreadsheet.

Columns

Boxes running vertically in a spreadsheet.

More than, Less than & Equal Tool

This highlights either more than (>), less than (<) or equals (=) symbols according to which numbers are either side of it.

Less Than

This symbol shows that a number to the left of it has less value than one to the right.

More Than

This symbol shows that a number to the left of it has greater value than one to the right.

Pie Chart

A circular chart divided into segments which each represent a part of the total amount.

Quiz Tool

This can be used after the equals sign or instead of a number in a calculation. If you input the correct answer it will disappear.

Spin Tool

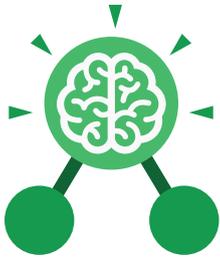
Clicking on this in a cell will increase or decrease the value in the cell to the right by 1.

Spreadsheet

A computer program that represents information in a grid of rows and columns. Any cell in the grid may contain either data or a formula that describes the value to be inserted based on the values in other cells.

Table

An organised display of information laid out in rows and columns.



Unit: 3.3

Spreadsheets

Key Images



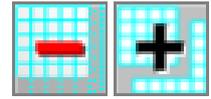
Open, close or share a file



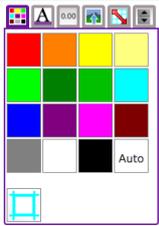
Save your work



Open a previously saved file



Increase or decrease spreadsheet size



The 2Calculate toolbox



The 2Calculate control toolbox



Move cell tool

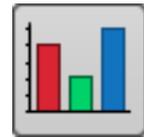


Chart control



Logic



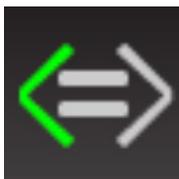
Spin



Equals



Advanced mode



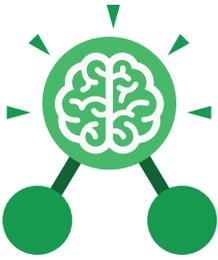
Is less than



Is more than



Is equal to



Unit: 3.4

Touch Typing

Key Learning

- To introduce typing terminology.
- To understand the correct way to sit at the keyboard.
- To learn how to use the home, top and bottom row keys.
- To practise typing with the left and right hand.

Key Resources

**purple
mash**



Key Vocabulary

Posture

The correct way to sit at the computer.

Keys

Buttons that are pressed on a computer keyboard or typewriter. These can be described by their position; bottom row, top row and home row (middle row).

Space bar

The bar at the bottom of the keyboard.

Typing

The action or skill of writing something by means of a typewriter or in this case a computer.

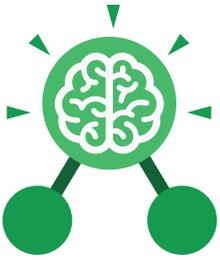
Key Questions

Why should I have a good posture at the computer?

A good posture is important to help you avoid any injuries that come from repeatedly using the computer incorrectly.

Why should I type certain keys with certain fingers?

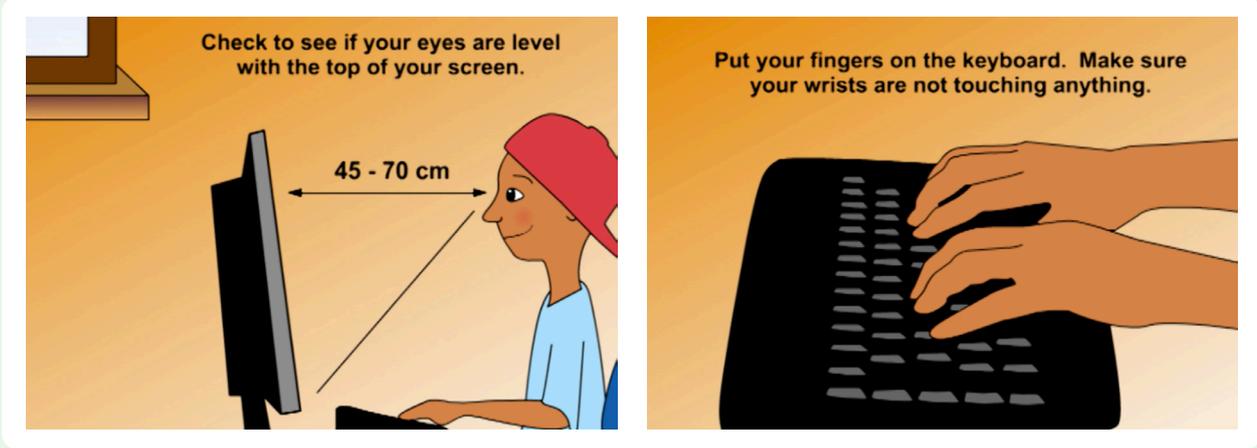
Using specific fingers for specific keys allows you to type more quickly.



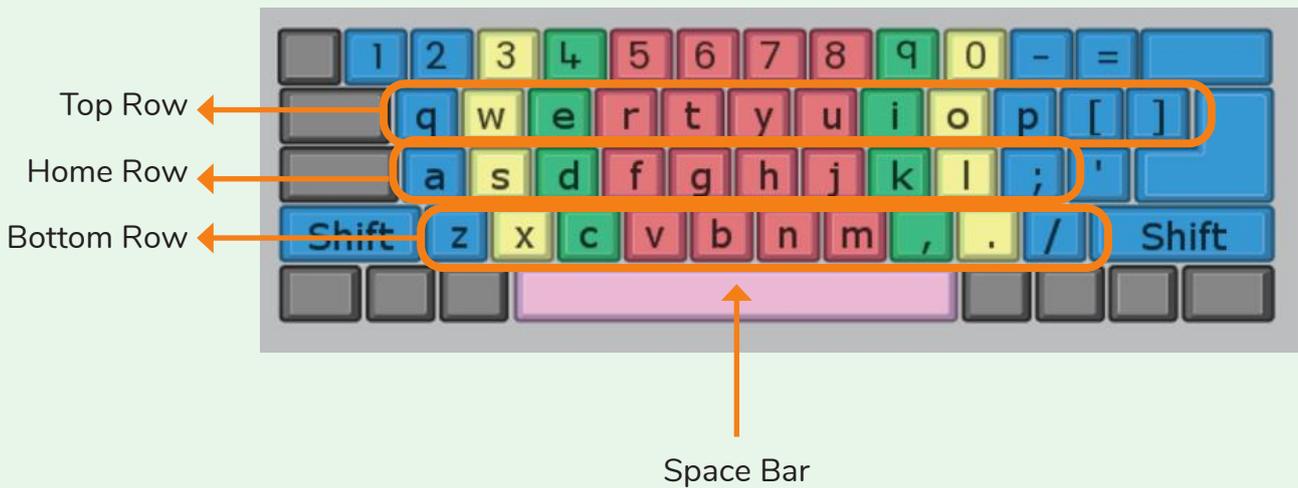
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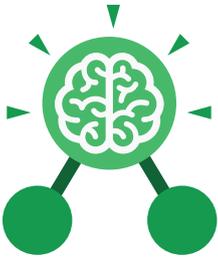
Touch Typing

Key Images



Posture





Unit: 3.5

Email

Key Learning

- To think about different methods of communication.
- To open and respond to an email using an address book.
- To learn how to use email safely.
- To add an attachment to an email.
- To explore a simulated email scenario.

Key Resources



2Email



2Connect



2Do It Yourself

Key Questions

What is email?

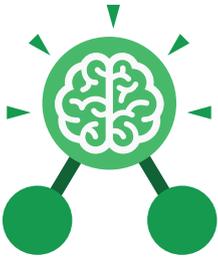
Email is a method of sending electronic communication from one device to another.

What should I do if I receive an email that makes me upset or scared?

If you are at school, you should tell the teacher immediately. If you receive the message at home, then you should tell a parent or guardian.

What information can I send in an email?

As well as sending a message, files such as photographs, videos, music and other resources can be attached to the email and sent to the receiver.



Unit: 3.5

Email

Key Vocabulary

Address book

A list of people who you regularly send an email to.

Attachment

A file, which could be a piece of work or a picture, that is sent with the email.

BCC

Blind Carbon Copy: A way of privately sending a copy of your email to other people so they can see the information in it, without the recipient knowing.

CC

A way of sending a copy of your email to other people so they can see the information in it.

Communication

The sharing or exchanging of information by speaking, writing, or using some other medium such as email.

Compose

To write or create something.

Email

(Electronic Mail) An Internet service that allows people who have an email address to send and receive instant electronic letters.

Inbox

The folder where new emails go into when they are received.

Password

A secret word, phrase or combination of letters, numbers and symbols that must be used to gain admission to a site or application such as email.

Personal Information

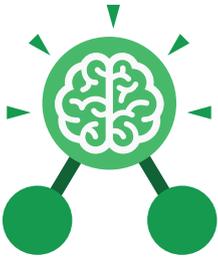
Identifying information about yourself such as your name, address and telephone number.

Save to draft

Allows you to compose an email and save it to draft folder to review later before sending.

Trusted Contact

A person who you know and trust, making an email from them safe to open.



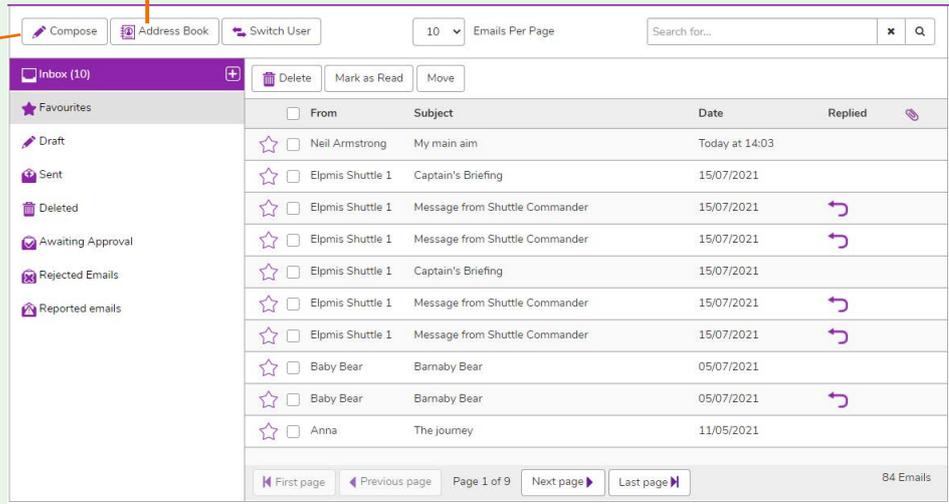
Unit: 3.5

Email

Key Images

A list of people you have sent emails to before

Click here to write your email

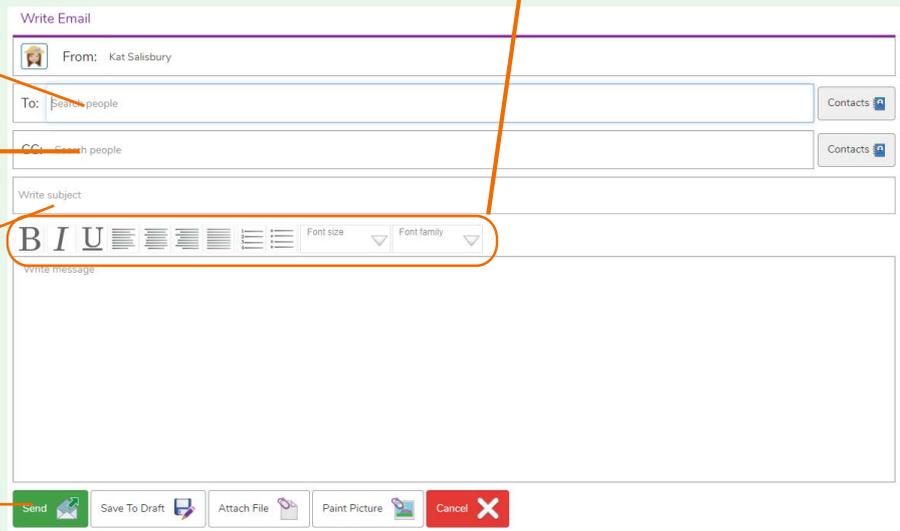


Formatting bar where you can change how the message looks.

Who is the email to be sent to?

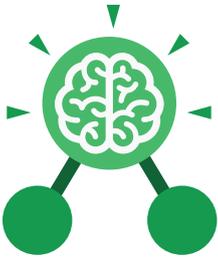
Who else will the email be sent to?

What is the email about?



Click this button to send the email.

Allows you to attach work and pictures to the email



Unit: 3.8 Graphing

Key Learning

- To enter data into a graph and answer questions.
- To solve an investigation and present the results in graphic form.

Key Resources



Key Vocabulary

Axis

A fixed horizontal or vertical reference line for the measurement of coordinates or to plot data in a graph.

Chart

A diagram that represents data. Charts include graphs and other diagrams such as pie charts or flowcharts.

Column

Vertical (down the page) divisions of a piece of work.

Data

A collection of information, especially facts or numbers, obtained by observation, questions or measurement to be analysed and used to help decision-making.

Graph

A diagram that represents data. There are specific layouts for graphs including bar graphs and line graphs.

Investigation

A formal inquiry or systematic study.

Row

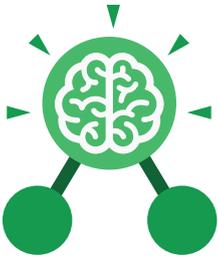
Horizontal (across the page) divisions of a piece of work.

Sorting

Organising data by a rule such as alphabetical or numerical.

Tally Chart

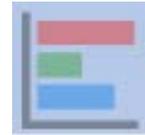
A way of recording how often something happens by counting in fives.



Unit: 3.8 Graphing

Key Images

Chart Title 



Insert the name of the graph here.

Add and remove a row from the table.

Vertical Bar Chart

Horizontal Bar Chart



Item	Number
Total	0

Block Graph

Line Graph

Pie Chart

Data entry table

Key Questions

What is a graph?

A diagram representing part of a set of data. Graphs can be drawn by hand or on the computer. There are different types of graphs.

What are the frame lines on the graph called?

They are the axes. The axis that goes up and down (vertical) is called the 'y' axis and usually shows the amount. The axis that goes across (horizontal) is called the 'x' axis and shows what is being measured.

What different kinds of graphs are there?

There are lots of different types of graphs including line graph, bar chart and pie chart.