

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

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.

Blocks of Command

A series of a few code instructions.

Button

An object that can trigger an event in response to being clicked.

Collision Detection

Detecting when two characters on the screen touch each other.

Command

A single instruction in a computer program.

Debug/Debugging

Looking for any problems in the code, fixing and testing them.

Develop

The process of designing programs and writing code.

Event

Something that causes a block of code to be run.

Execute

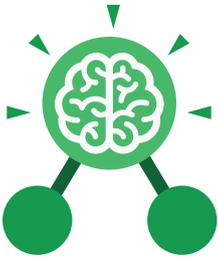
To run a computer program.

Flowchart

A diagram which represents an algorithm.

Nesting

When you write a command inside something else e.g. a block of commands could be nested inside a timer.



Unit: 3.1

Coding

Key Vocabulary

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.

Output

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

Plan

Set out what you would like the program to do before it is written.

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.

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.

Sequence

when a computer program runs commands in order.

Scene

A visual aspect of a program.

Sound

This is a type of output command that makes a noise.

Test

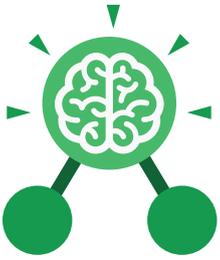
When code is run to check that it works correctly.

Timer

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

Values

Usually a number, a single character or a string of characters.



Unit: 3.1

Coding

Key Images



Open, close or share a file.



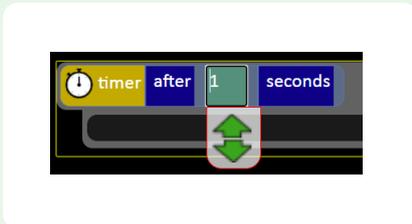
Save your work.



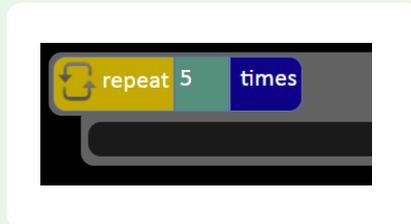
Open design mode in 2Code.



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?

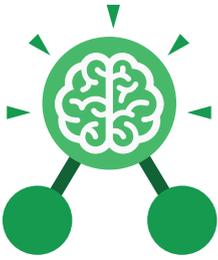
Using a flowchart to design a computer program is helpful as you can see it in its simplest form as inputs and outputs. You can see where the program is going which will prevent mistakes when creating the code.

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: 3.2 Online Safety

Key Learning

- To know what makes a safe password.
- To learn methods for keeping passwords safe.
- To understand how the Internet can be used in effective communication.
- To understand how a blog can be used to communicate with a wider audience.
- To consider the truth of the content of websites.
- To learn about the meaning of age restrictions symbols on digital media and devices.

Key Resources

**purple
mash**



2Dos



2Connect



2Publish Plus



2Blog



2Write

Key Questions

What is a password and why should we keep them safe?

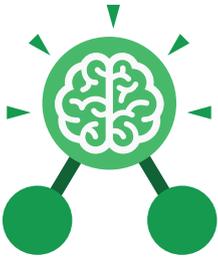
A password is a secret word or phrase that allows a user to access a website. Passwords are like toothbrushes in that they should not be shared with anyone else.

Is everything I read on the Internet true?

Just because something is on the Internet doesn't mean that it is true. Some people create spoof websites that pretend to be something else such as a bank website or to provide misleading information.

How do I know if I am old enough to play a computer game?

Computer games, like films, are often not suitable for children. PEGI ratings will show how old a person must be to play a game.



Unit: 3.2

Online Safety

Key Vocabulary

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 a website.

Blog

A regularly updated website or web page, typically one run by an individual or small group, that is written in an informal or conversational style.

Website

A set of related web pages located under a single name.

Internet

A global computer network providing a variety of information and communication facilities, consisting of interconnected networks and computers.

Concept map

A diagram that shows how different objects or ideas are related and connected.

Webpage

A page online that makes up one screen of a website.

Spoof website

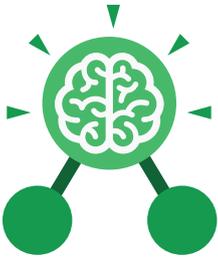
A website that uses dishonest designs to trick users into thinking that it represents the truth.

Username

An identification used by a person with access to a computer, network, or online service.

PEGI rating

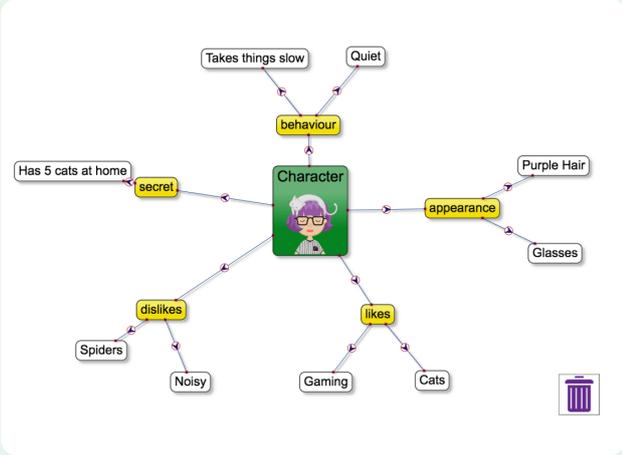
A rating that shows what age a game is suitable for.



Unit: 3.2

Online Safety

Key Images

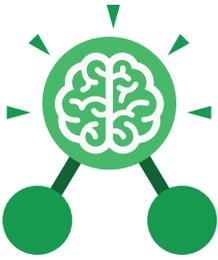


2Connect screen with nodes added



2Blog header

Username and Password screen



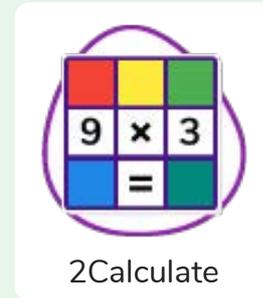
Unit: 3.3

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?

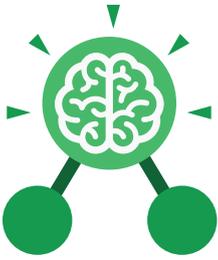
Label one column 'Subject' and list the subjects in this column. In the cells to the right put in the number of children who like this subject. Use the chart button to automatically create a chart. A pie chart would be a suitable choice.

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

< > =

Symbols used to represent comparing two values. $a < b$ means 'a is less than b'. $a > b$ means 'a is greater than b'. $a = b$ means 'a is equal to b'. These can be combined, for example $a \leq b$ means 'a is equal to or less than b'.

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.

Delete key

Use this key to remove the contents of a cell.

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.

Move cell tool

This tool makes a cell's contents moveable by drag-and-drop methods.

Rows

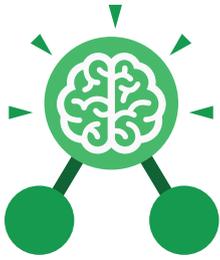
Vertical reference points for the cells in a spreadsheet.

Spin Tool

Clicking on this in a cell will increase or decrease the value in 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.



Unit: 3.3

Spreadsheets

Key Images



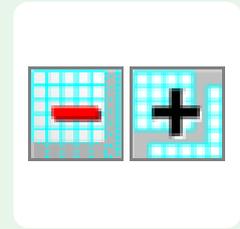
Open, close or share a file



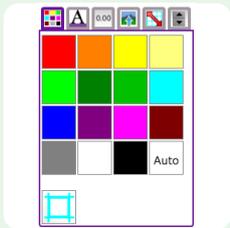
Save your work



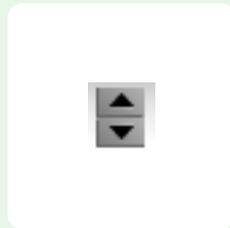
Open a previously saved file



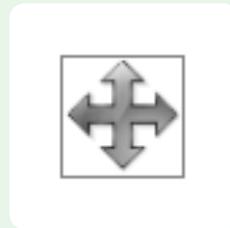
Increase or decrease spreadsheet size



The 2Calculate toolbox



The 2Calculate control toolbox



Move cell tool

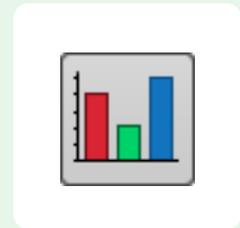
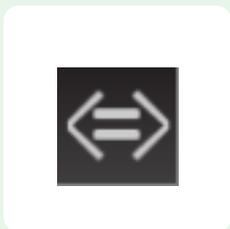
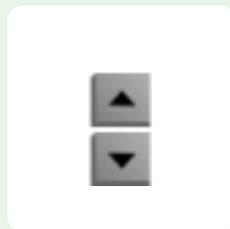


Chart control



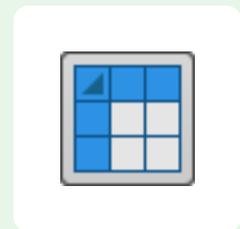
Logic



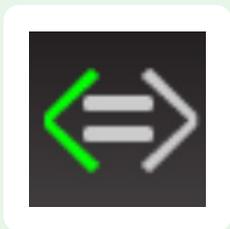
Spin



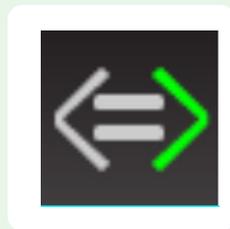
Equals



Advanced mode



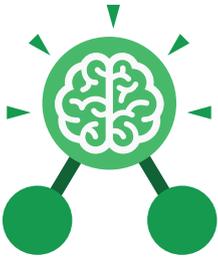
Is less than



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.

Top row keys

The keys on the top row of the keyboard.

Home row keys

The keys on the middle row of the keyboard.

Bottom row keys

The keys on the bottom row of the keyboard.

Space bar

The bar at the bottom of the keyboard.

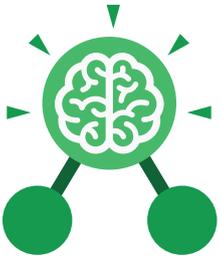
Key Questions

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?

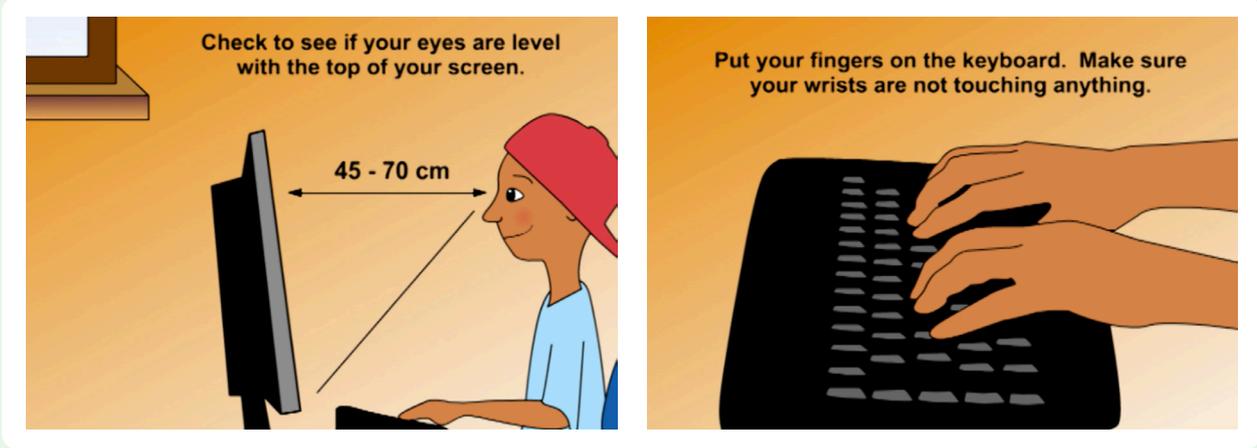
Using specific fingers for specific keys allows you to type more quickly.



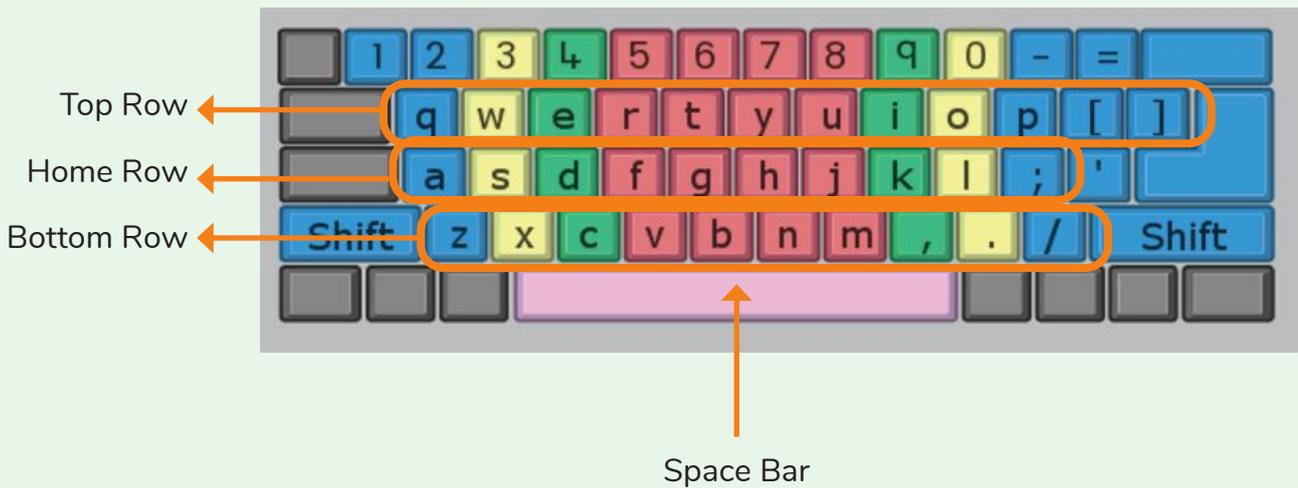
Unit: 3.4

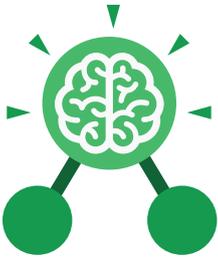
Touch Typing

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?

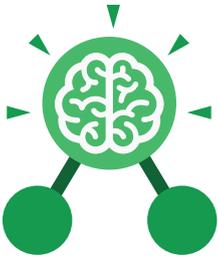
Email is a method of sending electronic communication from one device to another.

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

Communication

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

Email

Messages sent by electronic means from one device to one or more people.

Compose

To write or create something.

Send

To make an email be delivered to the email address it is addressed to.

Report to the teacher

A way in 2Email to tell the teacher if you have received an email that makes you feel upset or scared.

Attachment

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

Address book

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

Save to draft

Allows you to save an email that you are working on and send it later.

Password

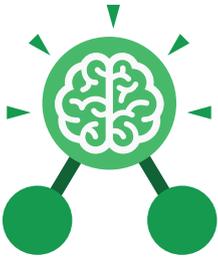
A secret word, phrase or combination of letters, numbers and symbols that must be used to gain admission to a site or application such as email.

CC

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

Formatting

Allows you to change the way the text of an email looks. For example, you can make the text bold or underline it.



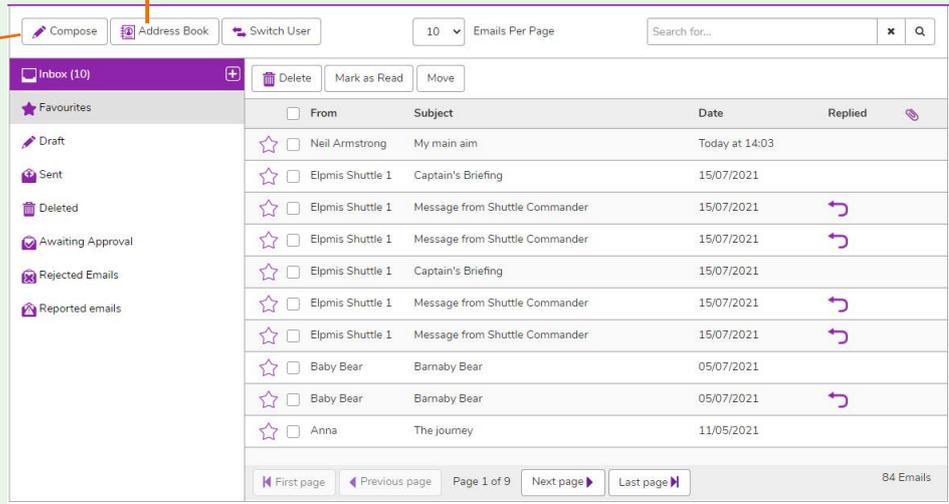
Unit: 3.5

Email

Key Images

A list of people you have sent emails to before

Click here to write your email

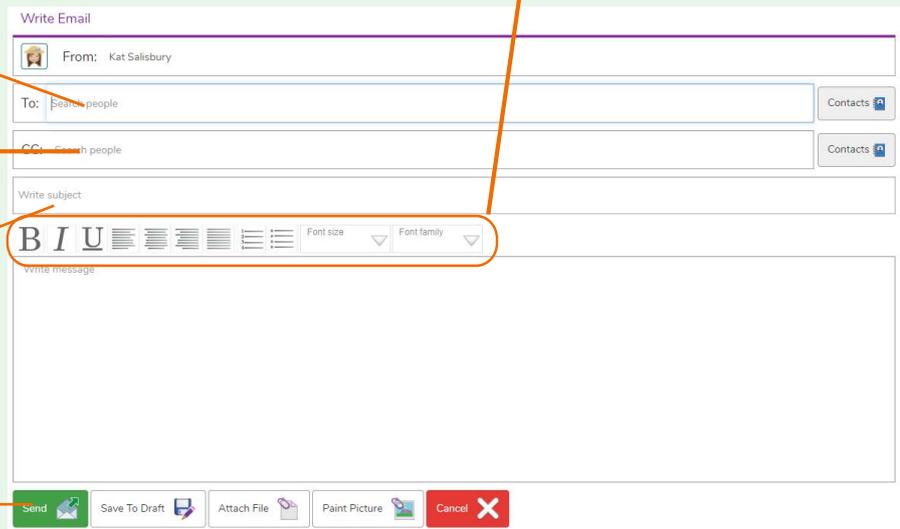


Formatting bar where you can change how the message looks.

Who is the email to be sent to?

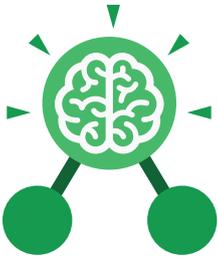
Who else will the email be sent to?

What is the email about?



Click this button to send the email.

Allows you to attach work and pictures to the email



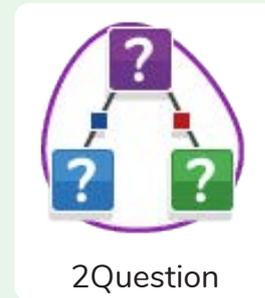
Unit: 3.6

Branching Databases

Key Learning

- To sort objects using just 'yes' or 'no' questions.
- To complete a branching database using 2Question.
- To create a branching database of the children's choice.

Key Resources



Key Vocabulary

Branching database

Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees.

Database

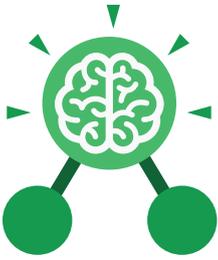
A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.

Question

Something that is asked or written to try and gain information.

Data

Facts and statistics collected together for information.



Unit: 3.6

Branching Databases

Key Questions

What is meant by data?

Facts about something; data can be words, numbers or pictures. For example, the class register contains data about the names, addresses and attendance of the children in the class.

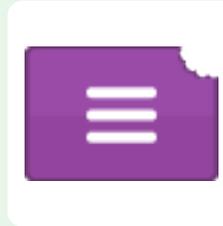
What is a database?

A collection of data organised in such a way that it can be searched, and information found easily. Database usually refers to data stored on computers.

What is a branching database?

Used to classify groups of objects. It is used to help identify the objects by answering questions with either 'yes' or 'no'. Branching databases can also be called binary trees.

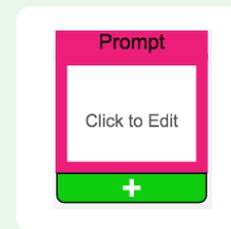
Key Images



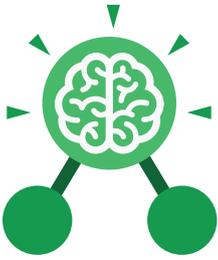
Open, close or share a file



Give the database a name



Add a question to begin to sort the information



Unit: 3.7 Simulation

Key Learning

- To consider what simulations are.
- To explore a simulation.
- To analyse and evaluate a simulation.

Key Vocabulary

Simulation

A computer simulation is a program that models a real-life situation. They let you try things out that would be too difficult or dangerous to do in real life.

Key Resources



2Simulate

Key Questions

What is a computer simulation?

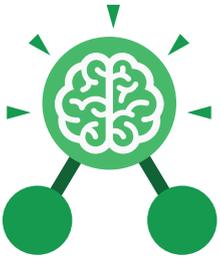
A program that models a real-life situation. They let you try things out that would be too difficult or dangerous to do in real life.

What kind of simulations are there?

Some simulations represent dangerous situations for training such as flying in space, carrying out medical operations or piloting an aeroplane. Others simulate activities for fun, such as racing simulations.

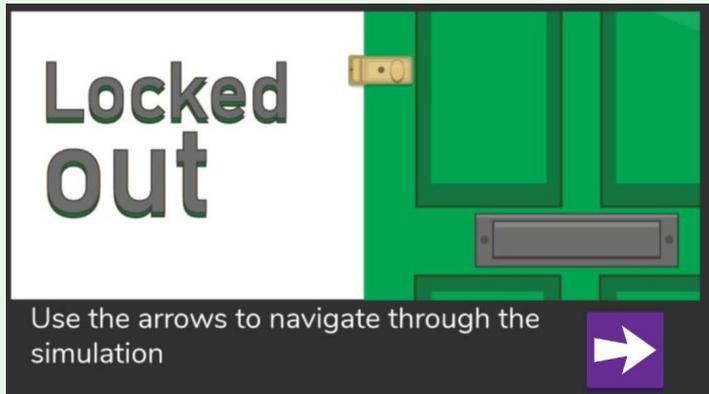
Are there any problems with simulations?

Simulations are often too simple; and unexpected problems can still occur in real life that are difficult to simulate. Simulations can also be very expensive.



Unit: 3.7 Simulation

Key Images



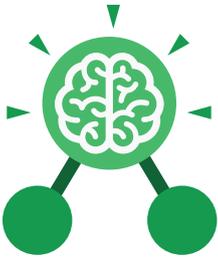
Locked Out

A lively dog causes problems for Mariza, her baby brother Sam and her mum.



The Dark Side of Elpmis

Trainee astronauts get ready for a mission to the planet Elpmis.



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

Graph

A diagram showing the value of objects.

Field

A part of a record.

Data

Facts and statistics collected together for reference

Bar chart

A graph in which the numerical amounts are shown by the height or length of lines or rectangles of equal width.

Block graph

A graph where a block represents one item.

Line graph

A graph where a line is used to show an amount.

Pie chart

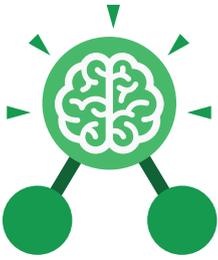
A type of graph in which a circle is divided into sections that each represent a part of the whole.

Row

A horizontal line of entries in a table or graph.

Column

A vertical line of entries in a table or graph.



Unit: 3.9

Presenting with Google Slides

Key Learning

- To understand the purpose of the Slides tool.
- To add slides to presentations.
- To add media to presentations.
- To format text appropriately.
- To add shapes and lines to enhance a presentation.
- To use the skills learnt to design and create an engaging presentation.

Key Resources



Google Slides

Key Images



Open a new document

Share

Access sharing options



Return to slides home



Undo key

Arial - 11 B I U A

Text formatting



Insert a text box



Insert image



Insert shape



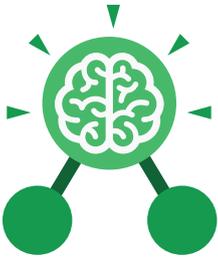
Insert line



Word art



Insert a new slide



Unit: 3.9

Presenting with Google Slides

Key Vocabulary

Animation

Visual effects used on objects such as text boxes or pictures. They allow these objects to be brought on and off the slide in a certain way.

Design Themes

A variety of ready-made templates with custom formatting (font, colour scheme etc.) which gives a certain look and feel.

Font

A set of type which shows words and numbers in a particular style and size.

Media

Images, videos, or sounds which can be added to a presentation.

Presentation

A visual way of displaying information to an audience that is clear and engaging. It can contain text, images, and videos.

Presentation Program

A computer program, such as Google - 3.9 (Google) Slides, which is used to create a presentation.

Slide

A single page within a presentation.

Slideshow

A collection of pages arranged in sequence that contains text and images to present to an audience. Often referred to as a Slides presentation.

Text box

A box in which text can be inputted and formatted.

Text formatting

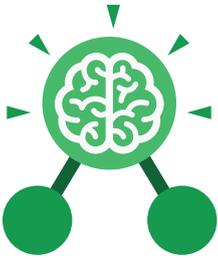
When you change the format of text on a page, including the font, the size and whether it is bold, underlined or in italics.

Transition

The interesting effect used when one slide moves onto the next.

WordArt

A way to treat text as a graphic so that you can add special effects to text.



Unit: 3.9

Presenting with Google Slides

Key Questions

What is a presentation program used for?

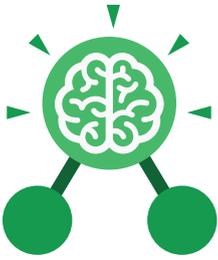
A presentation program is used to present information to an audience in an engaging way, such as including text, pictures and videos. Google Slides is an example of a presentation program.

How do you add a transition to a presentation?

Click on 'Transitions' at the top of the screen and select the transition you wish to use from the Motion menu. Choose the speed that you think will look best.

What features can you use to make a presentation more engaging?

You can give your presentation an engaging look and feel by using different fonts, colour schemes and using an interesting layout. Adding pictures, sound, and videos would also make a presentation more interesting to an audience. Using animations and interesting transitions between slides would also be engaging.



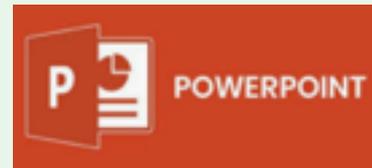
Unit: 3.9

Presenting with Microsoft PowerPoint

Key Learning

- To understand the uses of PowerPoint.
- To create a page in a presentation.
- To add media to a presentation.
- To add animations to a presentation.
- To add timings to a presentation.
- To use the skills learnt to design and create an engaging presentation.

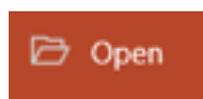
Key Resources



Key Images



Open a new document



Open an existing document



Save your work



Undo key



Font Category



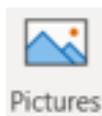
Insert a new slide



Insert a text box



Home tab where many editing tools are found



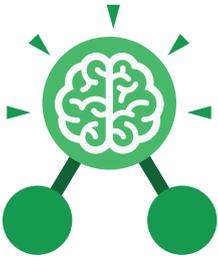
Insert a picture



Design tab where you can find ready-made design templates



Insert tab where you can add an object such as a picture or shape



Unit: 3.9

Presenting with Microsoft PowerPoint

Key Vocabulary

Animation

Visual effects used on objects such as text boxes or pictures. They allow these objects to be brought on and off the slide in a certain way.

Audio

Any type of sound, such as music or voiceover.

Design Templates

A variety of ready-made templates with custom formatting (font, colour scheme etc.) which gives a certain look and feel.

Entrance Animation

The animation used to bring an object (such as a picture or text box) onto the slide.

Font

A set of type which shows words and numbers in a particular style and size.

Media

Images, videos or sounds which can be added to a presentation.

Presentation

A visual way of displaying information to an audience that is clear and engaging. It can contain text, images and videos.

Presentation Program

A computer program, such as PowerPoint, which is used to create a presentation.

Slide

A single page within a presentation.

Slideshow

A collection of pages arranged in sequence that contains text and images to present to an audience. Often referred to as a PowerPoint presentation.

Stock image

Existing photos and images which are available and free to use.

Text box

A box in which text can be inputted and formatted.

Text formatting

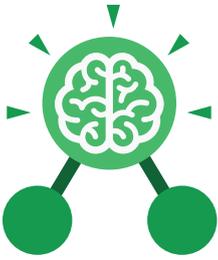
When you change the format of text on a page, including the font, the size and whether it is bold, underlined or in italics.

Transition

The interesting effect used when one slide moves onto the next.

WordArt

A way to treat text as a graphic so that you can add special effects to text.



Unit: 3.9

Presenting with Microsoft PowerPoint

Key Questions

What is a presentation program used for?

A presentation program is used to present information to an audience in an engaging way, such as including text, pictures and videos. PowerPoint is an example of a presentation program.

How do you add a transition to a presentation?

Click on 'Transitions' at the top of the screen and select the transition you wish to use. You can preview the transition by pressing 'preview' on the left-hand side.

What features can you use to make a presentation more engaging?

You can give your presentation an engaging look and feel by using different fonts, colour schemes and using an interesting layout. Adding pictures, sound, and videos would also make a presentation more interesting to an audience. Using animations and interesting transitions between slides would also be engaging.