Purple Mash Computing Scheme of Work: Knowledge Organisers

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

purple mash

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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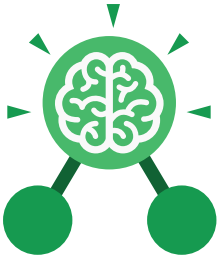

Unit: 3.1
Coding

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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Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.1
Coding

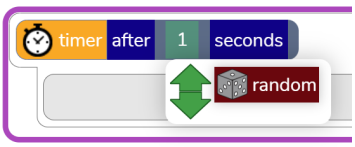
Key Images

Open, close or share a file.

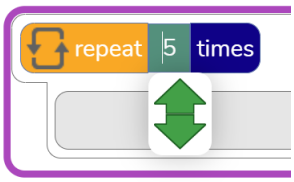
Save your work.

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 timers or forever. These 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.

Purple Mash Computing Scheme of Work: Knowledge Organisers

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

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.

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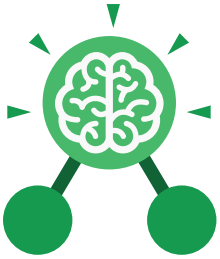


Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.2
Online Safety

Key Vocabulary

Appropriate
When using online services such as blogging or sharing information. It's important that users behave appropriately. Users should be truthful, respectful, kind, seek any permissions and report anything they feel uncomfortable with.

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.

Spoof
An imitation of something that appears to look genuine.

Vlog
A personal website or social media account where a person regularly posts short videos.

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.

Personal Information
This is information that is personal to someone. For example, their favourite food, their name and age.

Reputable source
Reputable sources are known places or sites that have accurate information. For example, well known news sites or encyclopaedias.

Reliable Source
A source of information that provides thorough, well-reasoned details based on valid evidence.

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

Inappropriate
Behaviour or content online that is upsetting, rude, unkind or makes someone feel unsafe or concerned.

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

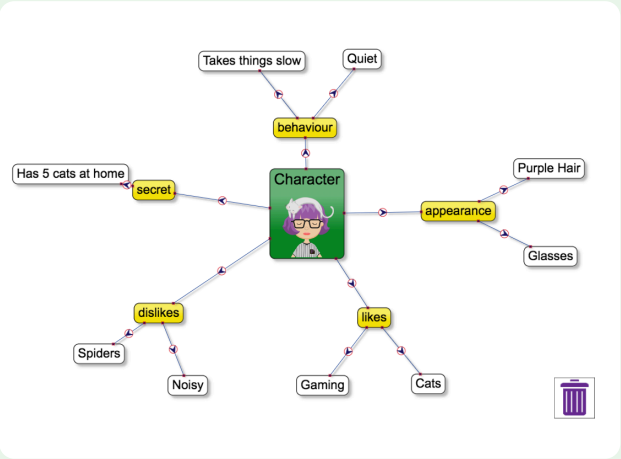
Permission
When someone shares or accesses content online, it's important that permission is given if it belongs to someone else or has information about them.

Verify
When seeking content online, it is important that a user verifies the information. They can do this by checking other sources and looking for signs that may indicate inaccuracy in the information.

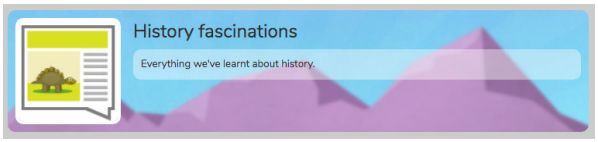
Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.2
Online Safety

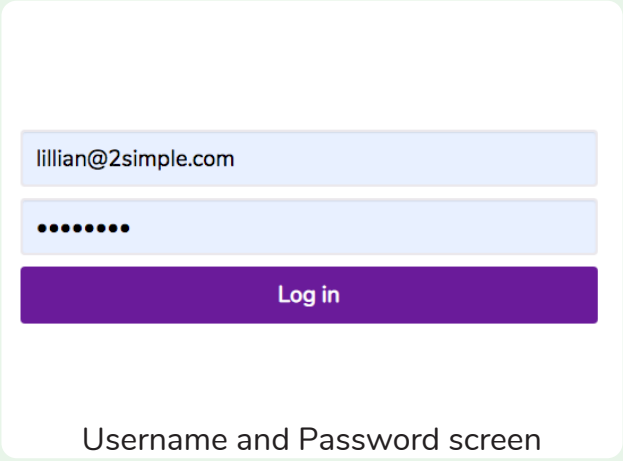
Key Images



2Connect screen with nodes added



2Blog header



Username and Password screen

Purple Mash Computing Scheme of Work: Knowledge Organisers

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

purple mash

2Calculate

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 x 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.

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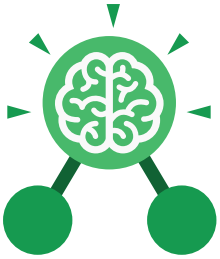


Unit: 3.3
Spreadsheets

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
Numerical, horizontal reference points for the cells in a spreadsheet.

Columns
Lettered, vertical reference points for the cells 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.

Purple Mash Computing Scheme of Work: Knowledge Organisers

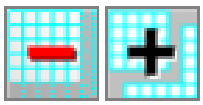
Unit: 3.3
Spreadsheets

Key Images

Open, close or share a file

Save your work

Open a previously saved file



Increase or decrease spreadsheet size

The 2Calculate toolbox

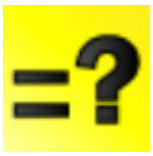
The 2Calculate control toolbox

Move cell tool

Chart control

Logic

Spin



Equals

Advanced mode

Is less than

Is more than

Is equal to

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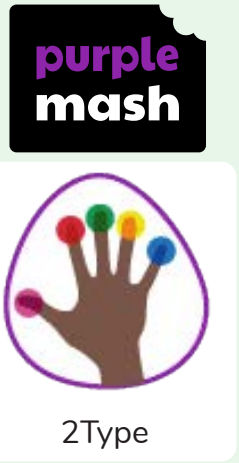
Purple Mash Computing Scheme of Work: Knowledge Organisers

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



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.

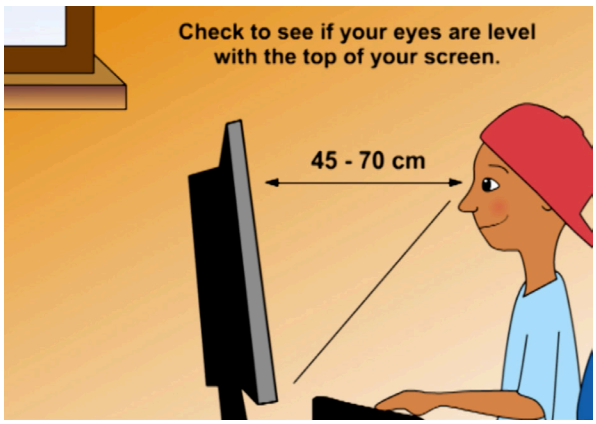
Why should I type certain keys with certain fingers?

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

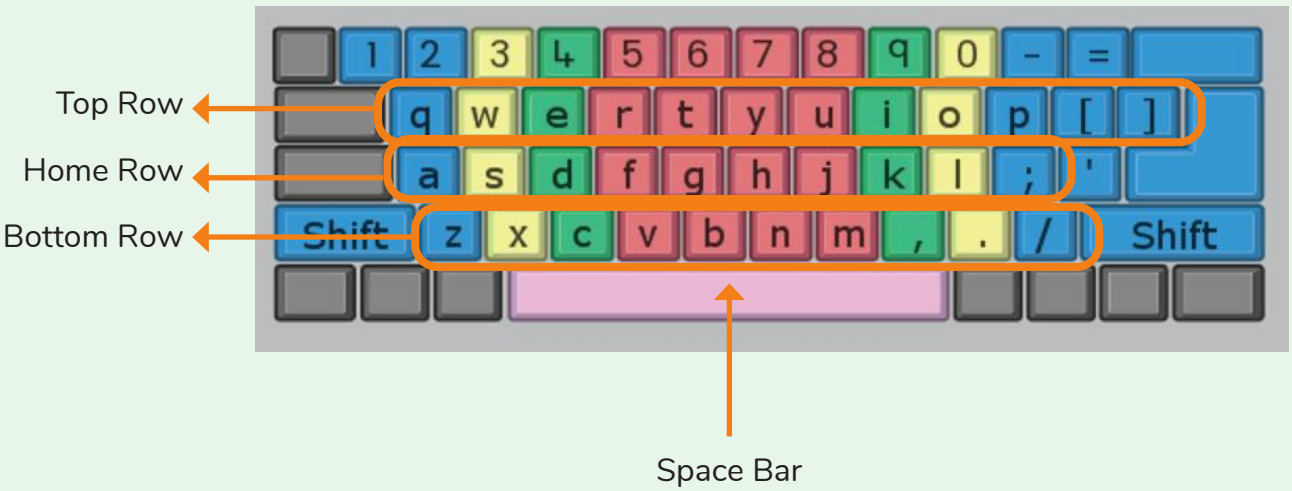
Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.4
Touch Typing

Key Images



Posture



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Purple Mash Computing Scheme of Work: Knowledge Organisers

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.

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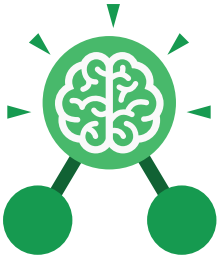


Unit: 3.5
Email

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.

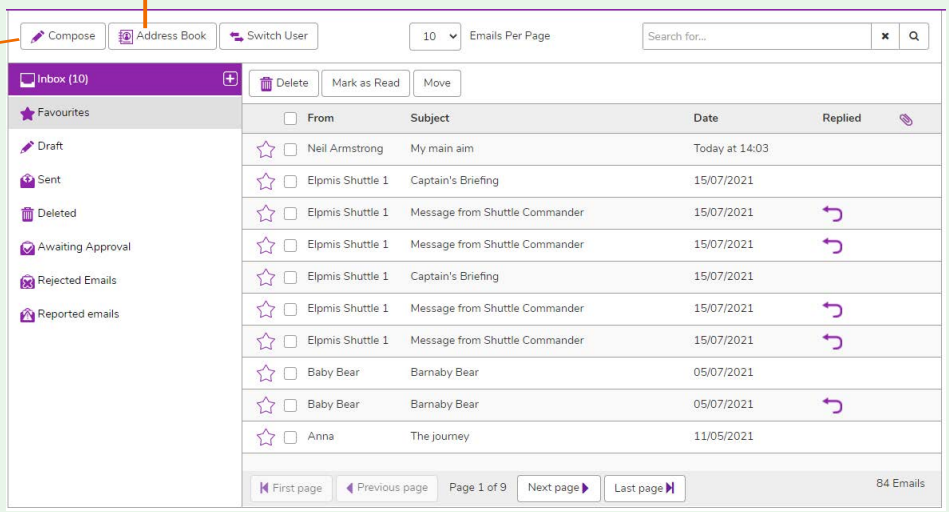
Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.5
Email

Key Images

A list of people you have sent emails to before

Click here to write your email

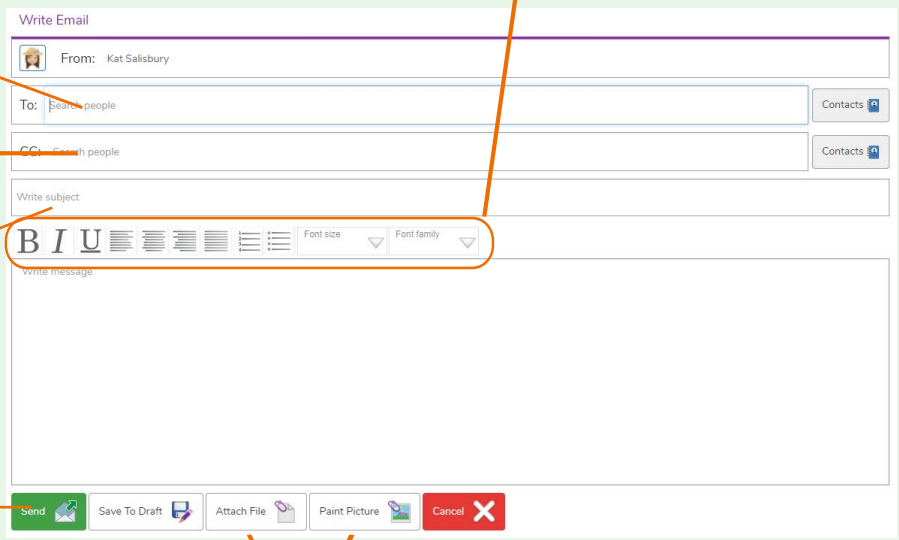


Formatting bar where you can change how the message looks.

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

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Purple Mash Computing Scheme of Work: Knowledge Organisers

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

2Question

Key Vocabulary

Binary Tree
Another name for a branching database.

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.

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.

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

Debugging
The process of identifying and removing errors from computer hardware or software.

Purple Mash Computing Scheme of Work: Knowledge Organisers

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.

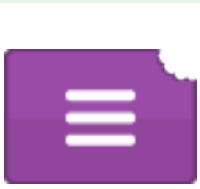
What is a database?

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.

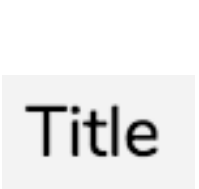
What is a branching database?

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

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Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.7
Simulation

Key Learning

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

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.

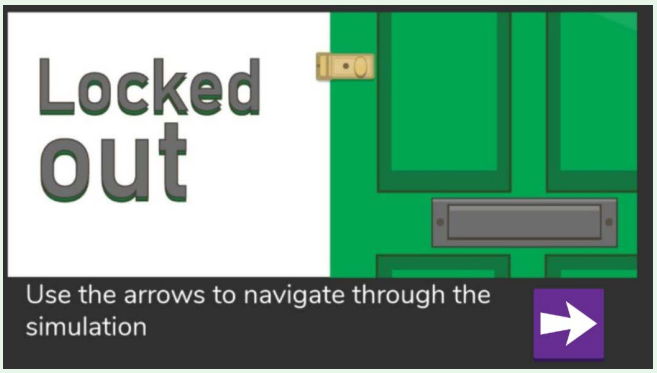
Are there any problems with simulations?

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.

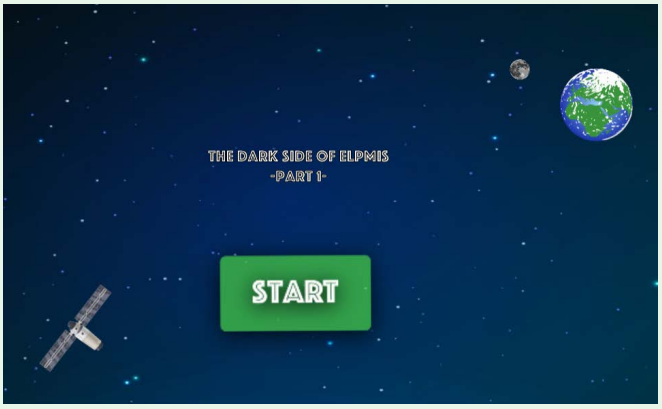
Purple Mash Computing Scheme of Work: Knowledge Organisers

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.

Key Vocabulary

Analysis
A detailed examination of something.

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.

Evaluation
To judge the value, condition or effectiveness of something.

Modelling
The act of representing something, often on a smaller scale.

Decision
The act or result of making a choice after careful thought.

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Purple Mash Computing Scheme of Work: Knowledge Organisers

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

2Graph

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.

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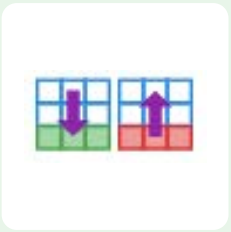
Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.8
Graphing

Key Images

Insert the name of the graph here.



Add and remove a row from the table.

Vertical Bar Chart

Horizontal Bar Chart

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.

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Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.9
Presenting with Microsoft PowerPoint

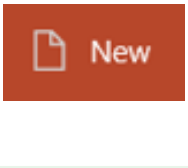
Key Learning

- 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.

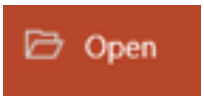
Key Resources

POWERPOINT

Key Images



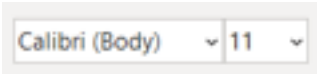
Open a new document



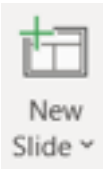
Open an existing document

Save your work

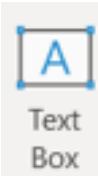
Undo key



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

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Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.9
Presenting with Microsoft PowerPoint

Key Vocabulary

Animation
The process of adding movement to still objects.

Border Properties
The style of the border around text or an object including the colour, thickness and dashes.

Font formatting
Changing the appearance of text on the screen.

Layer
Describes which objects appear in the front (foreground) of a slide and which appear behind other objects.

Media
Information in the form of words, sounds, numbers, images, or graphics in electronic, print or broadcast form.

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

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.

Text box
An object that can be inserted into a piece of work in a program that allows the user to input text.

Transition
How a slide moves from one to the next.

WordArt
A way of changing the appearance of text often using decorative shapes.

Purple Mash Computing Scheme of Work: Knowledge Organisers

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.

Purple Mash Computing Scheme of Work: Knowledge Organisers

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

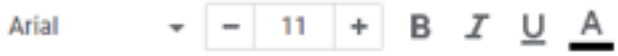
Key Images

Open a new document

Access sharing options

Return to slides home

Undo key



Text formatting

Insert a text box

Insert image

Insert shape

Insert line

Word art

Insert a new slide

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Purple Mash Computing Scheme of Work: Knowledge Organisers

Unit: 3.9
Presenting with Google Slides

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Purple Mash Computing Scheme of Work: Knowledge Organisers

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.