

What do I already know?

All children will know

Unit 1.1 Online Safety and PM

- Online Safety and PM
- Safe logins
- Concept of privacy
- Concept of ownership
- The need to logout Technology Outside School

Unit 1.6 Technology Outside School

- Developing ideas about technology that we are surrounded by and its purpose

Unit 2.2 Online safety

- Sharing to a display board
- Sharing online
- Digital footprint

Unit 2.5 Effective searching

- Exploration of what the internet is
- Accessing the World Wide Web
- Digital footprint
- Searching and sharing

On-line safety Unit 3.2 2022/23

Key Images

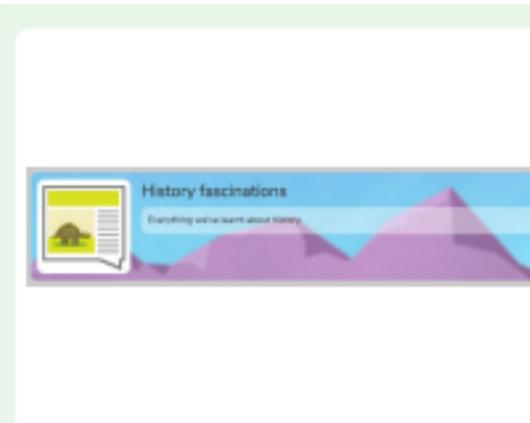


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2Connect screen with nodes added



2Blog header

Username and Password screen

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.

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.

What do I already know?

All children will know

Unit 1.1 Coding

- Introducing block coding
- Objects and actions
- Events (Click event, sound output)
- Executing a program
- Design view: Planning

Unit 1.4 Lego builders

- Algorithms
- Logical decision making
- Sequencing instructions
- Following instructions

Unit 2.1 Coding

- Algorithms
- Collision detection
- Timers
- Object types
- Buttons
- Debugging

Unit 2.4 Questioning

- Logical decision processing.
- Forward planning to achieve a solution

Coding Unit 3.1 2022/23



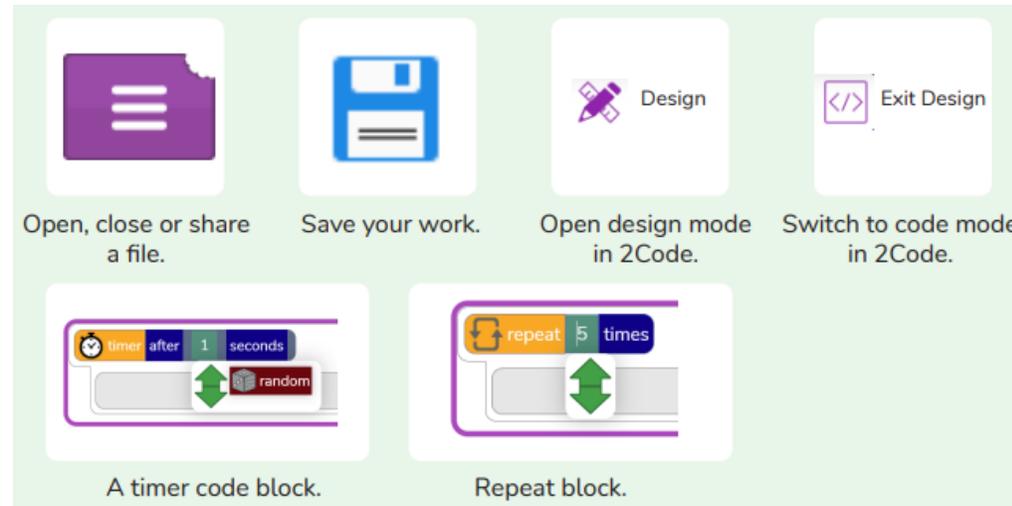
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Key Learning

- 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 Images



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.

What do I already know?

All children will know

Unit 2.1 Coding

- Algorithms
- Collision detection
- Timers
- Object types
- Buttons
- Debugging

Unit 3.1 Coding

- Flowcharts
- Timers • Repeat
- Code, test, debug process

Unit 3.6 Branching databases

- Logical decision processing
- Modelling selection on a binary model

Key Learning

- To begin to understand selection in computer programming.
- To understand how an IF statement works.
- To understand how to use co-ordinates in computer programming.
- To understand the 'repeat until' command.
- To understand how an IF/ELSE statement works.
- To understand what a variable is in programming.
- To use a number variable.
- To create a playable game.

Coding Unit 4.1 2022/23



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Key Images

Open design mode in 2Code.

Switch to code mode in 2Code.

A change variable block.

An 'if/else' command.

Repeat until.

Creating a variable in 2Code.

Key Questions

Explain the stages of the design, code, test, debug coding process. This is a process to go through as you create a program using coding • Design: create a design which could be a flowchart, a labelled diagram or a storyboard. This helps to think through the algorithms required • Code: code the algorithms using to code and adapting the design. Test and Debug: see if the program works and fix any errors.

How can variables and if/else statements be useful when coding programs with selection? The variable could be set either to 0 or 1 and this could be changed by user action or a timer. If/else statement outcomes could depend upon the value of the variable. command for selection.

What does selection mean in coding and how can you achieve this in 2Code? The code will contain commands that require a decision and the next code to run will depend upon the outcome of this decision. In 2Code we used the 'if' command for selection.

What is the difference between the different object types in 2Code Gibbon level? The different objects have different properties. This makes then suitable for different type of programs. • Buttons can only be clicked and have their colour and text changed. • Vehicles have speed and angle. • Characters have movement in 4 directions. • Turtles have rotation, pen up and down.

Coding Unit 5.1 2022/23

What do I already know?

All children will know

Unit 4.1 Coding

- Code, test, debug process
- IF statements
- Repeat Until and IF/ ELSE Statements
- Number Variables

Key Questions

What does simulating a physical system mean? Creating a program where the objects behave as they would in the real world. For example, a football program that uses angles, speed and friction to simulate kicking a football. When simulating a physical system, you first must break the system down into parts that can be coded (decomposition). The different parts will come together to make the full simulation.

Describe how you would use variables to make a timer countdown and a scorepad for a game. Timer countdown: Create a timer variable and set it to the starting number of seconds. Add a Timer command that repeats and subtracts 1 every second. Add a text object in design view to display this number. Score: Create a variable to store the score, each time the user gains a point, change and display the value of the variable.

Give examples of how you could use the Launch command in 2Code. Clicking on a button or other object in the program to opens another 2Code program or a webpage.

Key Learning

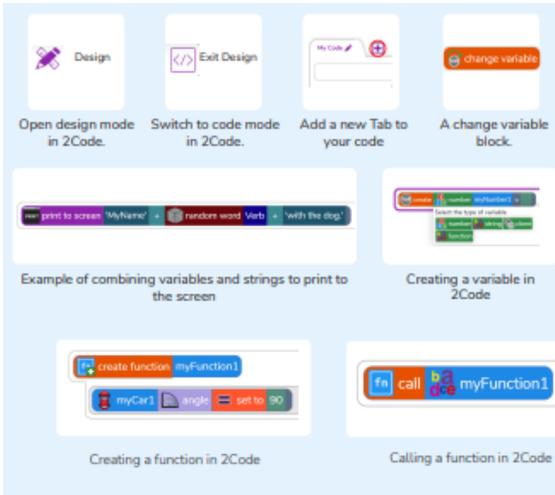
- To begin to simplify code.
- To create a playable game.
- To understand what a simulation is.
- To program a simulation using 2Code.
- To know what decomposition and abstraction are in computer science.
- To take a real-life situation, decompose it and think about the level of abstraction.
- To understand how to use friction in code. To begin to understand what a function is and how functions work in code.
- To understand what the different variables types are and how they are used differently.
- To understand how to create a string.
- To understand what concatenation is and how it works.



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Key Images



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Unit 2.4 Questioning

- Logical decision processing.
- Forward planning to achieve a solution

Unit 3.6 Branching Databases

- Logical decision processing
- Modelling selection on a binary model

Unit 4.5 Logo

- Text-based coding
- Utilize understanding of coding structures

Unit 5.1 Coding

- Efficient Coding
- Simulating a Physical System
- Decomposition and Abstraction Friction and Functions Introducing Strings

Coding Unit 6.1 2022/23



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Key Learning

- To design a playable game with a timer and a score.
- To plan and use selection and variables.
- To understand how the launch command works.
- To use functions and understand why they are useful.
- To understand how functions are created and called.
- To use flowcharts to create and debug code.
- To create a simulation of a room in which devices can be controlled.
- To understand how user input can be used in a program.
- To understand how 2Code can be used to make a text-adventure game.

Key Images



Key Questions

How can you use Tabs in 2Code Gorilla?

Tabs are used to organise your code and make it more readable. This also makes it easier to debug. Give the Tabs useful names to help with this.

What is a function in coding?

Give an example that you have used in 2Code Gorilla. A function is a block of code that you can access when you need it, so you don't have to rewrite the same block repeatedly. You call the function each time you want it. In a turtle program you could have a button that will make the turtle draw a square each time you click it. In the text adventure, there were functions for each room that were called when the user navigated to the room.

In 2Code Gorilla, how can a program receive user input?

When the user clicks on an object, when the user presses keys or swipes the screen with the mouse, the 'Get Input' and 'Prompt for input' commands. On a touchscreen: when the screen is touched or swiped.

What do I already know?

All children will know

Unit 2.6 Creating Pictures

- 2Paint a Picture: art effects, collage effects

Unit 4.6 Animation

- Create a stop motion animation using 2Animate
- Use of art tools to create backgrounds and effects

Some children will know

Unit 5.5 Game creator

- Themed art
- Art in 3D
- Animating 3D characters

Key Learning

- To be introduced to 2Design and Make and the skills of computer aided design.
- To explore the effect of moving points when designing.
- To design a 3D Model to fit certain criteria.
- To refine and print a model.

3D Modelling Unit 5.6 2022/23

Key Questions

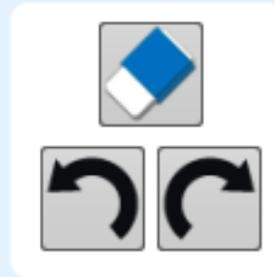
What are the different view of an object available in 2Design and Make?

Net, Points and 3D.

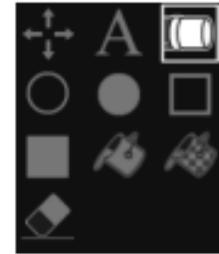
How can the objects designed in 2Design and Make be turned into 3D objects? You can print the net and then cut and fold this into shape or you can convert the file into a format recognised by 3D printers.

How is CAD software used in industry? Give some examples. It is used to design 3D objects in a 2D environment. Some examples are; Architectural plans for buildings; designing layouts for interiors; designing objects such as packaging and designing mechanical components; designing shoes and clothing.

Key Images



Clear, Undo and Redo

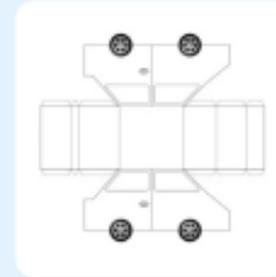


Fill Options

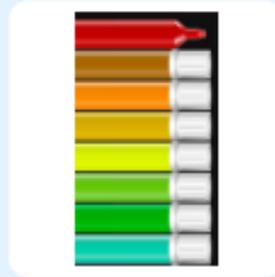


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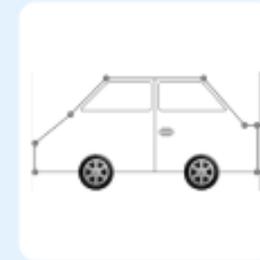
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Net View



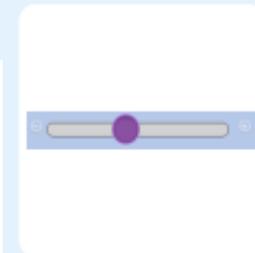
Colour Palette



2D Image



3D Image



Magnify

What do I already know?

All children will know

Unit 1.1 Exploring Purple Mash

- General use of Purple Mash
- Simple text entry
- Use of a writing template

Unit 2.5 Effective Searching

- Efficient use of a search engine
- Leaflet creation

Unit 2.8 Presenting ideas

- Presenting ideas in a variety of styles including through typed text

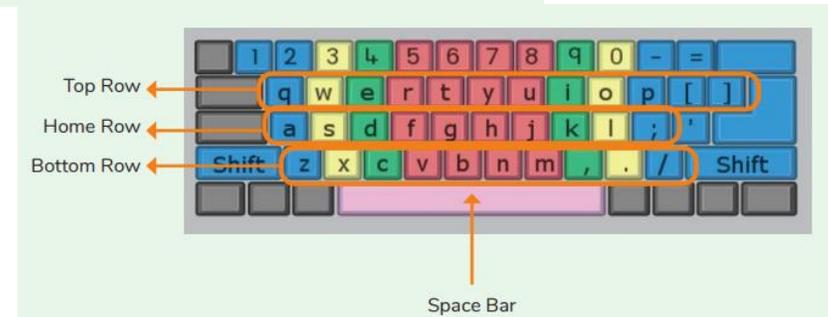
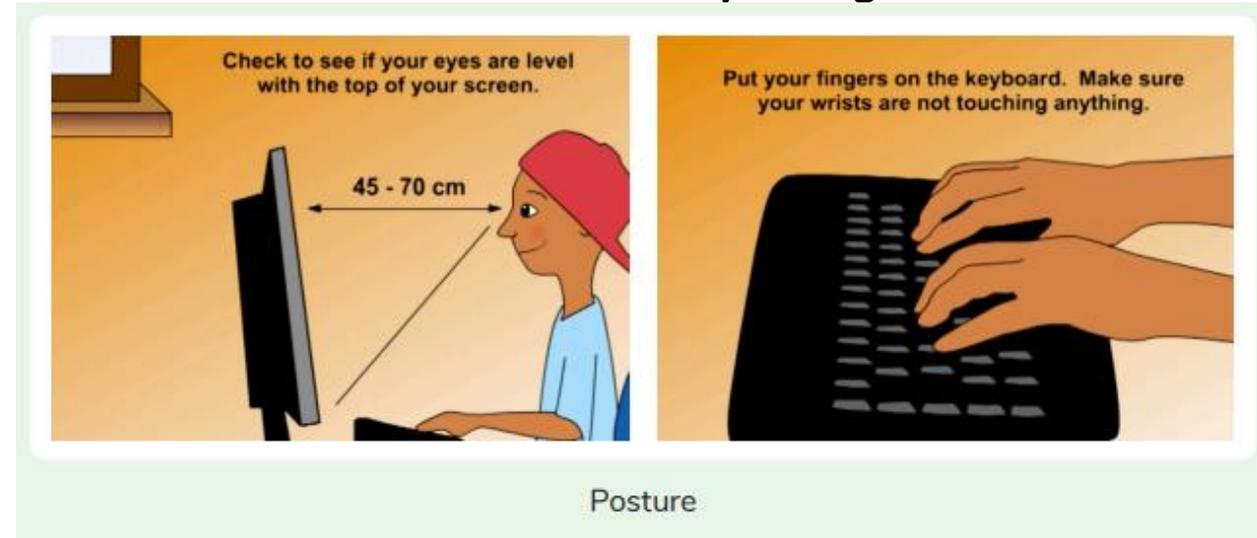
Touch typing Unit 3.4 2022/23



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Key Images



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.

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.

What do I already know?

All children will know

Unit 1.1 Exploring Purple Mash

- General use of Purple Mash
- Design: avatar creation
- Paint Projects: use of the simple paint tools

Unit 1.6 Animated Stories

- 2Create a Story: Painting tool.
- What animation is
- Animating images using built in effects
- Concept of background (static) and foreground (can move)

Units 1.7, 2.1 Coding

- Sequencing programs to create animation effects

Unit 2.6 Creating pictures

- 2Paint a Picture: art effects, collage effects

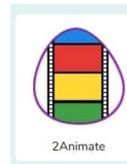
Some children will know

Unit 3.1 Coding

- Sequencing programs to create animation effects

Animation Unit 4.6

2022/23



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Key Learning

- To discuss what makes a good animated film or cartoon.
- To learn how animations are created by hand.
- To find out how animation can be created in a similar way using the computer.
- To learn about onion skinning in animation.
- To add backgrounds and sounds to animations.
- To be introduced to 'stop motion' animation.
- To share animation on the class display board and by blogging.

What is meant by onion skinning?

Onion skinning is a 2D computer graphics term for a technique used in creating animated cartoons and editing movies to see several frames at once.

Key Images

A green play button icon on a grey background.	An onion with a knife icon, representing onion skinning.	A purple document icon with three white horizontal lines, representing a menu.	An icon showing two film strips, one with a green plus sign and one with a red minus sign, representing adding or deleting a frame.
Play the animation.	Switch onion skinning on or off.	Open, close or share animation.	Add or delete a frame from the animation.
A grey speaker icon with sound waves and a green plus sign, representing adding a sound file.	A black and white film strip icon, representing the number of frames.	A small landscape picture icon, representing adding a background picture.	A purple and white webcam icon, representing inserting a photograph from a webcam.
Insert a sound file into the animation.	Number of frames in the animation.	Add a background picture to the animation.	Insert a photograph from a webcam into the animation.

Key Questions

What is an animation? Animation is the process of giving the illusion of movement to drawings, models, or inanimate objects. Animated motion pictures and television shows are highly popular forms of entertainment.

What is meant by stop motion animation? Stop motion animation is a filming technique in which objects (such as clay models) are photographed in a series of slightly different positions so that the objects seem to move.

What do I already know?

Some children will know

Unit 4.2 Online Safety

- Phishing
- Digital footprint
- Malware and viruses
- Plagiarism

Unit 4.7 Effective searching

- Reliable sources
- Search algorithms - impact on what you see

Unit 5.6 On-line safety

- Responsibility to others when sharing
- Sources of support
- SMART rules
- Sharing passwords
- Image manipulation
- Citing sources
- Searching
- Reliability

Unit 5.8 Word processing

- Use of images
- Plagiarism
- Citing sources

Blogging Unit 6.4 2022/23



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Key Learning

- To identify the purpose of writing a blog.
- To identify the features of a successful blog.
- To plan the theme and content for a blog.
- To understand how to write a blog and a blog post.
- To consider the effect upon the audience of changing the visual properties of the blog.
- To understand how to contribute to an existing blog.
- To understand how and why blog posts are approved by the teacher.
- To understand the importance of commenting on blogs.

Key Images



Key Questions

What is a blog?

A blog is a website or webpage that is regularly updated by the author. A blog also allows the reader to post comments or opinion based on what is written.

What can a blog be about?

A blog can be written about any subject. You could write a blog about school such as information about the subject you are studying. Alternatively, you could write a blog about your favourite team or movie.

How are the audience involved in a blog?

A key feature of blogs is that the audience can leave a comment or opinion about what they have read on the blog.

Spreadsheets Unit 3.3. 2023/24



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What do I already know?

All children will know

Unit 1.3 Pictograms

- What is data?
- Representing data

Unit 1.8 Coding

- Introduce 2Calculate
- Spreadsheet navigation
- Adding images
- Vocab: cell, column, row

Unit 2.3 Spreadsheets

- Copying and pasting
- Totalling tools
- Addition
- Table layout
- Block graph

Unit 2.4 Questioning

- Ways to represent data
- Pictograms (2Count)
- Binary trees (2Question)
- Databases (2Investigate)

Key Learning

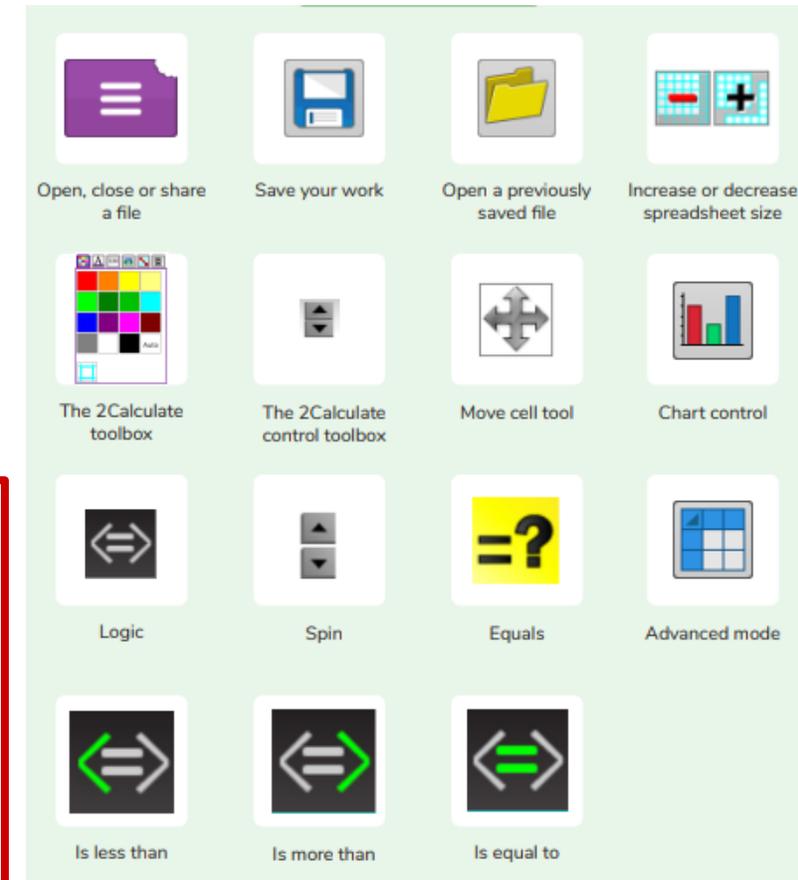
- To use the symbols more than, less than and equal to, to compare values.
- To use 2Calculate to collect data and produce a variety of graphs.
- To use the advanced mode of 2Calculate to learn about cell references.

Key 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.

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

Key Images



What do I already know?

All children will know

Unit 1.1 Exploring Purple Mash

- Safe logins
- Using Purple Mash search functionality

Unit 1.6 Technology Outside School

- Developing ideas about technology that we are surrounded by and its purpose

Unit 2.2 Online safety

- Sharing to a display board
- Sharing online
- Digital footprint

Unit 2.5 Effective searching

- Exploration of what the internet is
- Accessing the World Wide Web
- Digital footprint
- Searching and sharing

Effective searching Unit 4.7 2022/23



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Key Learning

- To locate information on the search results page.
- To use search effectively to find out information.
- To assess whether an information source is true and reliable.

Some children will know

Unit 3.2 Online safety

- Reliability of information and spoof websites
- Appropriate websites
- Reporting problems

Unit 4.2 Online safety

- Phishing
- Digital footprint
- Malware and viruses
- Plagiarism

Key Images



Key Questions

What is a search engine? A search engine is a piece of software that allows the user to find and display pages from the World Wide Web.