On-line safety Unit 4.2 2023/24

Aiskew, Leeming Bar Church of England Primary School

'Rooted in love and growing together to become lifelong learners'

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

Key Learning

- To understand how children can protect themselves from online identity theft.
- To understand that information put online leaves a digital footprint or trail and that this can aid identity theft.
- To identify the risks and benefits of installing software including apps.
- To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism.
- To identify appropriate behaviour when participating or contributing to collaborative online projects for learning.
- To identify the positive and negative influences of technology on health and the environment.
- To understand the importance of balancing game and screen time with other parts of their lives.

Key Images

Key Questions

What is meant by a digital footprint?

A digital footprint is the information that exists about a person based upon sites that they have visited, searches that they have done, information that they have shared and other online behaviours.

What is SPAM?

SPAM messages are emails or online messages sent from a computer to many other users. The users are sent the email without requesting it. The purpose of SPAM is for advertising, phishing or malware.

What is meant by plagiarism?

Plagiarism refers to using someone else's work and claiming it to be your own.

Coding Unit 3.1
2023/24

Aiskew, Leeming Bar
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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

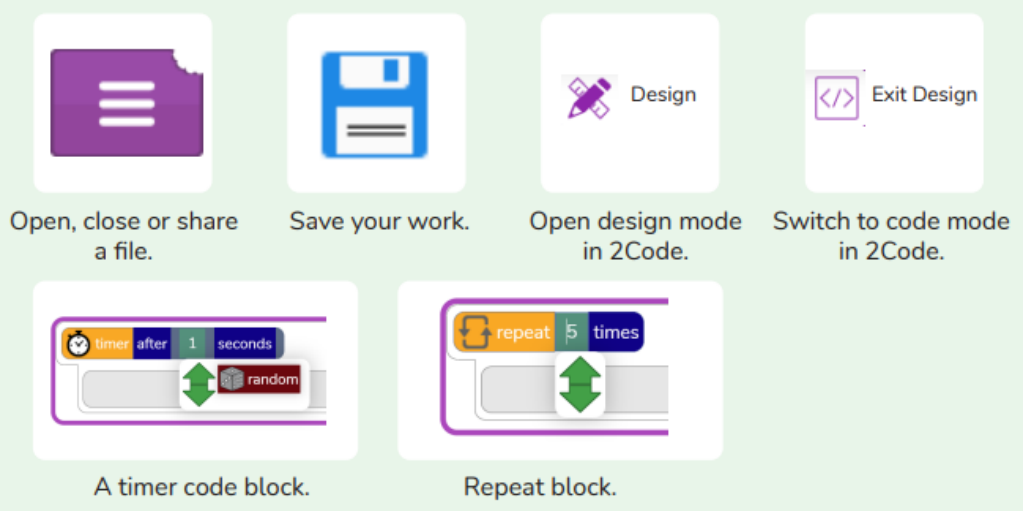
Unit 2.1 Coding
- Algorithms
- Collision detection
- Timers
- Object types
- Buttons
- Debugging

Unit 2.4 Questioning
- Logical decision processing.
- Forward planning to achieve a solution

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 2023/24

Aiskew, Leeming Bar Church of England Primary School

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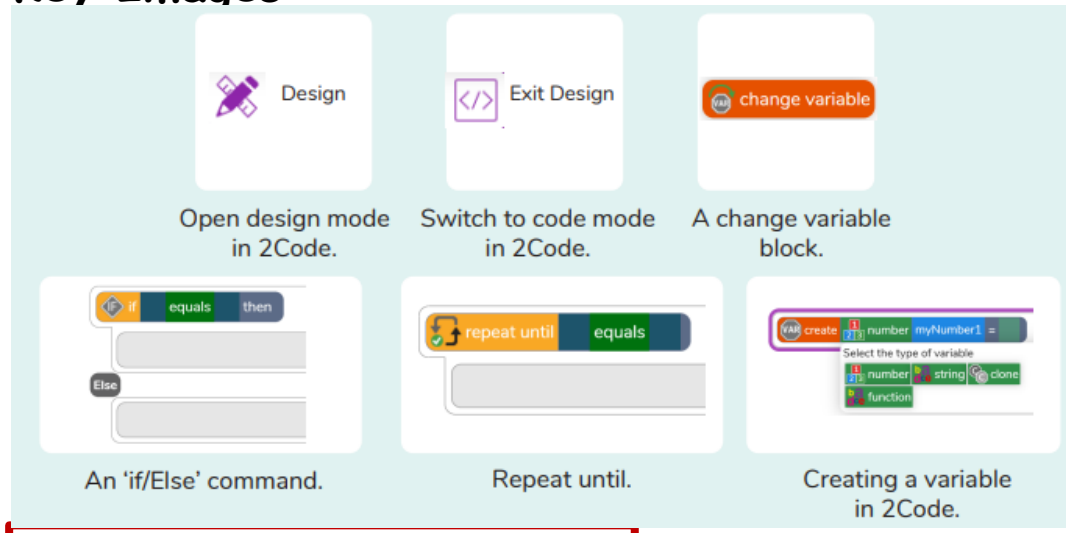
Key Images



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 2023/24

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 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 a 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

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.

Coding Unit 6.1 2023/24

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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 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

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 you 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.

Branching Databases Unit 3.6 2023/24

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What do I already know?

All children will know

Unit 1.2 Grouping and Sorting

- Sorting data according to criteria

Unit 1.3 Pictograms

- Collecting and presenting data in a picture format

Unit 2.3 Spreadsheets

- Use of 2Calculate to collect data and produce a graph

Unit 2.4 Questioning

- Enquiry into different data handling tools
- Use of questioning to separate and group data

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

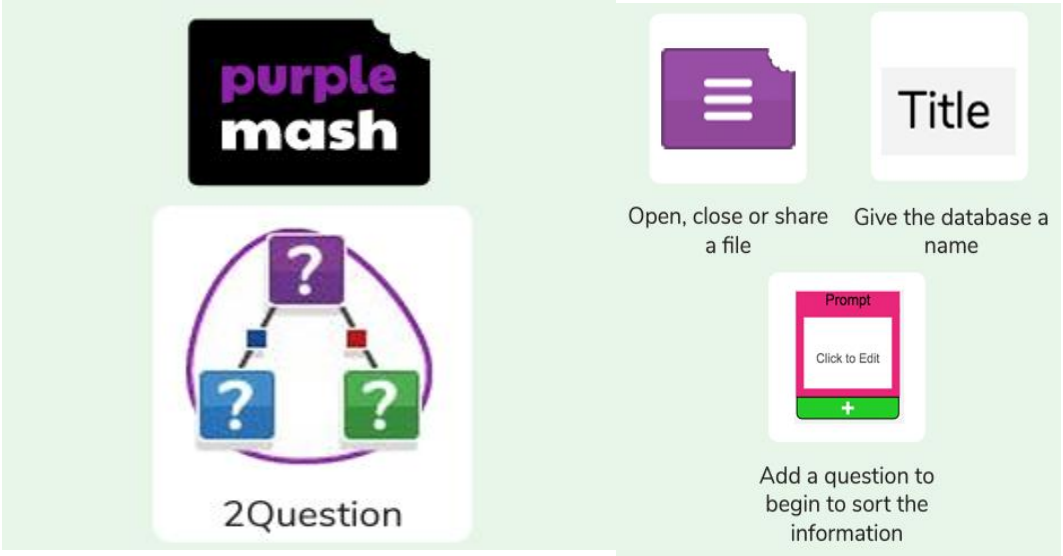
Key Questions

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



Writing for different audiences Unit 4.4 2023/24

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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 1.6 Animated Stories

- Creating text and the use of illustrations
- Genre: animated picture book

Unit 2.8 Presenting Ideas

- Creating work for a variety of purposes
- Further understanding of genres
- Presenting the same information in different styles: animated story, quiz based on a story, concept map of a story, writing template
- Altering fonts
- Share to a displayboard

Key Learning

- To explore how font size and style can affect the impact of a text.
- To use a simulated scenario to produce a news report.
- To use a simulated scenario to write for a community campaign.

Key Learning

Unit 3.7 Simulations

- Use of 2Simulate
- Familiarity with two simulations: Locked Out and The Dark Side of Elpmis
- Use of Email simulations

Unit 3.9 Presenting

- Use of either MS PowerPoint or Google Slides to learn about good presentations: both content and delivery

Key Images

Key Questions

Why should I change the font when I am writing?

Changing the appearance of the font can help make things easier to read and highlight important parts of the text.

Campaign
An organised course of action to achieve a goal.

Format
The way in which something is arranged or set out.

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

Quizzing Unit 6.7 2023/24

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What do I already know?

All children will know

Unit 1.2 Grouping and Sorting

- Sorting data according to criteria

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 4.4 Writing for Different Audiences

- Considering understanding and abilities of an audience

Unit 5.4 Databases

- Creating and searching a database for information
- Wording of questions to be effectively answered by searching a database

Key Learning

- To create a picture-based quiz for young children.
- To learn how to use the question types within 2Quiz.
- To explore the grammar quizzes.
- To make a quiz that requires the player to search a database.
- To make a quiz to test your teachers or parents.

Key Questions

What factors do you need to consider when creating a quiz?
The intended audience; age and reading ability and interests. The aim of the quiz; is it for fun like a game, or to make sure that the user has learnt something?

Name three question types in 2Quiz.

- Sequencing
- Grouping and Sorting
- Text based
- Multiple-choice
- Labelling

Apart from the questions, what else does a quiz need to contain?
A title screen and instructions for the user. Feedback for the user (some quizzes). Time limits (some quizzes). Images for interest as well as part of the questions.

Key Images

Simulations Unit 3.7 2023/24

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What do I already know?

All children will know

Unit 1.7 Coding

- Following instructions
- Creating simple programs
- Computer simulation of real life events

Unit 1.9 Technology Outside School

- Understanding the term 'technology'
- Recognising the use of technology around them

Unit 2.1 Coding

- Algorithms
- Collision detection - simulating air traffic control
- Object types
- Debugging

Unit 3.1 Coding

- Flowcharts
- Timers and sequence- simulation of lightning strike
- Code, test, debug process

Key Learning

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

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.

Key Images

2Simulate

Evaluation

To judge the value, condition or effectiveness of something.

Decision

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

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

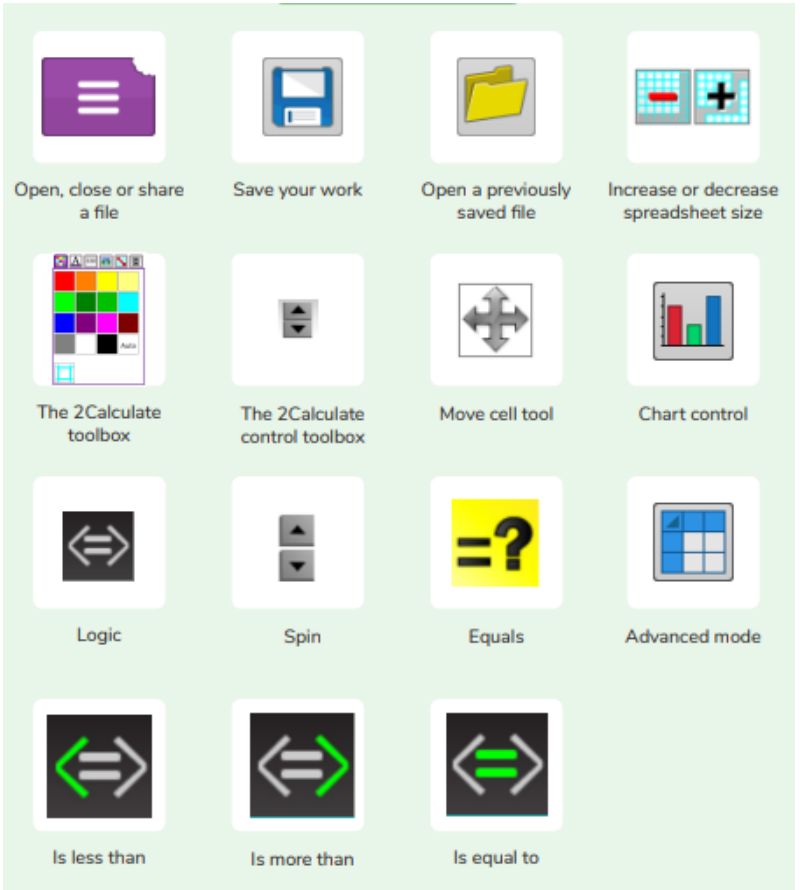
- To use the symbols more than, less than and equal to, to compare values.
- To use 2Calculate to collect data and produce a variety of graphs.
- To use the advanced mode of 2Calculate to learn about cell references.

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



Spreadsheets Unit 4.3. 2023/24

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What do I already know?

All children will know

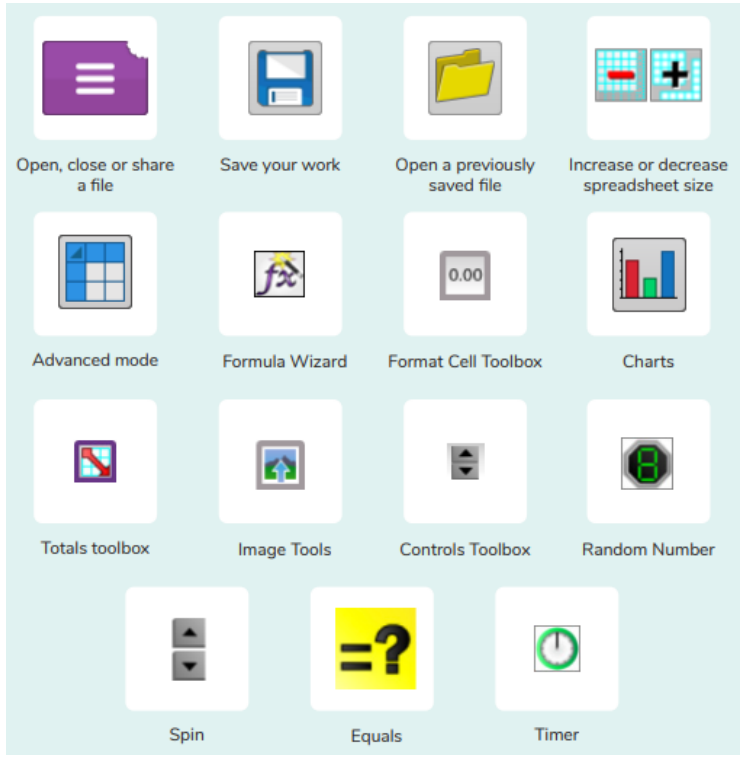
Unit 3.3 Spreadsheets
- Pie charts and Bar graphs
- Boolean comparison tools (<=>)
- Spin tool
- Advanced mode
- Cell references

Unit 3.8 Graphing
- Data representation in 2Graph
- Use software to investigate data

Key Learning

- To format cells as currency, percentage, decimal to different decimal places or fraction.
- To use the formula wizard to calculate averages.
- To combine tools to make spreadsheet activities such as timed times tables tests.
- To use a spreadsheet to model a real life situation.
- To add a formula to a cell to automatically make a calculation in that cell.

Key Images



Key Questions

How would you add a formula so that the cell shows the percentage score for a test? Click on the cell where you want the percentage score to be displayed then click the formula wizard button. Click on the cell that contains the score. Choose the ÷ operation then click on the cell that shows what the test was out of. Click OK. Click on the answer cell and then the formet cell button. Choose % as the format

Which tools would you use to create a timed times tables test in 2Calculate? You could use the random tool, the spin tool, the equal tool and the timer tool.

Give an example of the data that could be best represented by a line graph. Data where both axes will contain continuous data so that you can see trends in the data. Such as ages and heights, time and temperature, years and costs.

Spreadsheets Unit 5.3. 2023/24

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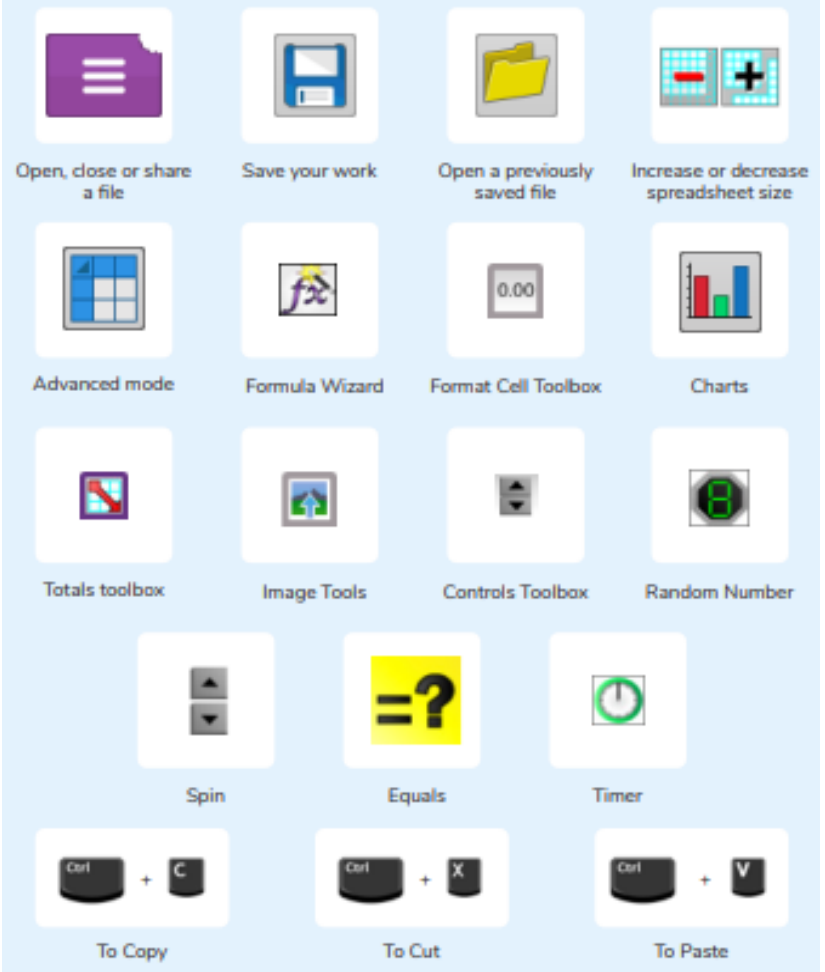
What do I already know?
All children will know
- **Unit 4.3 Spreadsheets**
- Formula wizard
- Cell formatting
- Timer, random number and spin buttons
- Budget planner sheet
- Line graphs

Some children will know
Unit 5.4 Databases
- Data representation in 2Investigate
- Creating and interrogating data • Use of filter, sort and search

Key Learning

- To use formulae within a spreadsheet to convert measurements of length and distance.
- To use the count tool to answer hypotheses about common letters in use.
- To use a spreadsheet to model a real life problem.
- To use formulae to calculate area and perimeter of shapes.
- To create formulae that use text variables.
- To use a spreadsheet to help plan a school cake sale.

Key Images



Key Questions

How would you add a formula so that the cell shows the product of two other cells? Click on the cell where you want the product to be displayed then click the formula wizard button. Click on the cell that contains the first number. Choose the x operation then click on the second number. Click OK

Explain what a spreadsheet model of a real-life situation is and what it can be used for? It represents the data of a situation for example: Budgeting for a party; working out how big a field needs to be for a certain number of animals; working out how to spend your pocket money over time. Using the existing data to predict what time your shadow will be a certain length etc.

Spreadsheets Unit 6.3. 2023/24

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What do I already know?
All children will know
- **Unit 5.3 Spreadsheets**
- Converting measures
- Count tool
- Formulae
- Variables in formulae
- Event planning

Unit 5.4 Databases
- Data representation in 2Investigate
- Creating and interrogating data • Use of filter, sort and search

Key Learning
- To use a spreadsheet to investigate the probability of the results of throwing many dice.
- To use a spreadsheet to calculate the discount and final prices in a sale.
- To use a spreadsheet to plan how to spend pocket money and the effect of saving money.
- To use a spreadsheet to plan a school charity day to maximise the money donated to charity.

Key Questions

How would you add a formula so that the cell shows the total of a column of cells? Use the formula wizard advanced total tool or type a formula into the cell by using the '=' symbol, mathematical operators and cell references.

What is a computational model and what it can be used for? Modelling in Computing means creating or using a simulation (a model) of a real-life situation, on a computer. It represents the data of a situation. For example; budgeting for a party; working out how big a field needs to be for a certain number of animals; working out the best price for an item or using the existing data to predict what time your shadow will be a certain length.

Key Images