



The Big Picture

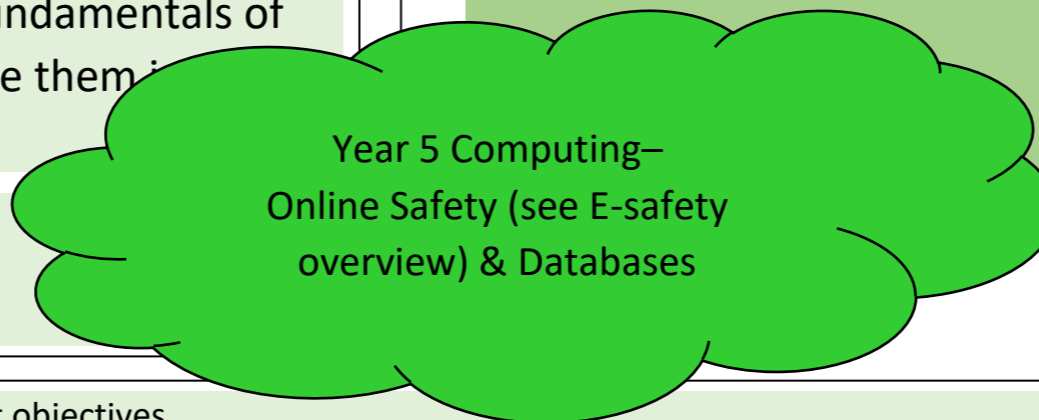
With the right E-safety knowledge, children can better understand the dangers of releasing personal information, as well as how to recognise unethical behaviours or prevent cyberbullying.

Databases are a core component of virtually every single business and touch hundreds of everyday transactions more than most people realise. For children growing up today, learning the fundamentals of databases, what they do, and how you can manipulate them is a skill that will help set them for a future career path.

What do we already know?

Knowledge Retrieval:

- To sort objects using YES/NO questions.
- To complete a branching database using 2Question.
- To create a branching database of the children's choice.



Year 5 Computing—
Online Safety (see E-safety
overview) & Databases

NC objectives

Pupils should be taught to:

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- Use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
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Key unit objectives

- To gain a greater understanding of the impact that sharing digital content can have.
- To understand the advantages and disadvantages, permissions, and the purposes of altering image digitally and the reasons for this.
- To search the internet for reliable sources.
- To learn how to search for information in a database.
- To create a database around a chosen topic.

Key Questions

- Are children aware of who to talk to if they are upset about something online?
- Can they use the SMART rules as guidance online?
- Do children understand the different ways to search a database?
- Can they search a database to answer questions correctly?
- Can children add records to their database?
- Can they create a formula in a spreadsheet and then check for accuracy and plausibility?
- Can they identify a database field?
- Can they search databases for information using symbols such as = > or < ?

Key vocabulary and understanding for concept connectors

Smart rules – a set of rules based around the word SMART designed to help you stay safe when online.

Shared images – a picture that is shared online for other people to see.

Identify theft – the practice of using another person's name and personal information in order to obtain credit, loans, etc.

Find – search for information in a database.

Record – a collection of data about one item entered into a database.

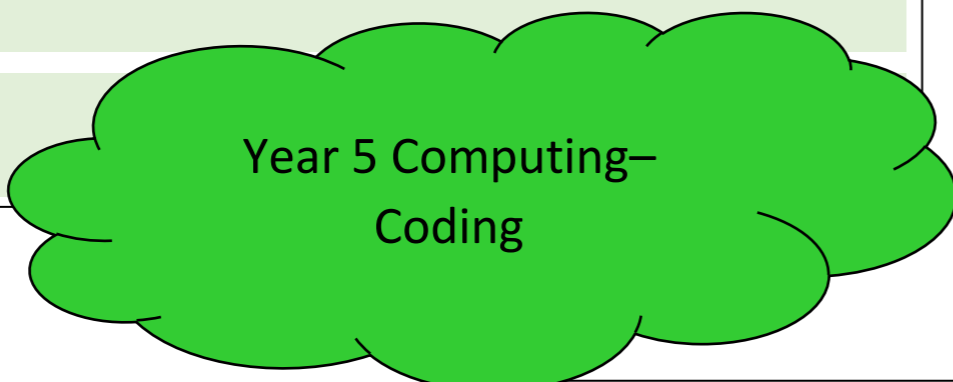
Sort, group, and arrange – different ways to sort information in a database so it easy to read, understand and interpret.

Table – sorting information into rows and columns.



The Big Picture

This unit helps children to develop problem-solving skills. They will begin to learn to quickly fix and try again in different ways when something doesn't work out. Coding also equips children with the ability to stick with a problem and work on finding a solution. This problem-solving technique is transferable to a lot of other aspects of their learning.



Year 5 Computing - Coding

What do we already know?

Knowledge Retrieval:

- To review coding vocabulary and knowledge.
- To create a simple computer program.
- To begin to understand selection in computer programming.
- To understand how an IF statement works.
- To understand the Repeat until command.
- To understand how an IF/ELSE statement works.
- To understand what a variable is in programming.

Key vocabulary and understanding for concept connectors

Algorithm – a precise step by step set of instructions used to solve a problem or achieve an objective.

Button – an object on the screen which can be clicked.

Event – something that causes a block of code to be run.

Nesting – when you write a command inside something else.

Debug/Debugging – looking for any problems in the code, fixing and testing them.

Run – to cause the instruction in a program to be carried out.

Test – when code is run to check that it works correctly.

Design mode – used to create the look of a 2Code computer program when it is run.

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.

Simulation – a model that represents a real or imaginary situation.

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

If/Else – a conditional command. This tests a statement. If the statement is true, then the commands inside the 'if block' will be run. If the condition is not met, then the commands inside the 'else block' are run.

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Key unit objectives

- To review existing coding knowledge.
- To begin to be able to simplify code.
- To understand what a simulation is.
- To begin to understand what a function is and how functions work in code.
- To understand what the different variable types are and how they are used differently.
- To understand how to create a string.

Key Questions

- Can they combine sequences of instructions and procedures to turn devices on or off?
- Can they write programs that have sequences and repetitions?
- Can they use variables in their code?
- Can children create a program which represents a physical system?
- Can they create and use strings in programming?
- Can children create and use functions in their code to make their programming more efficient?



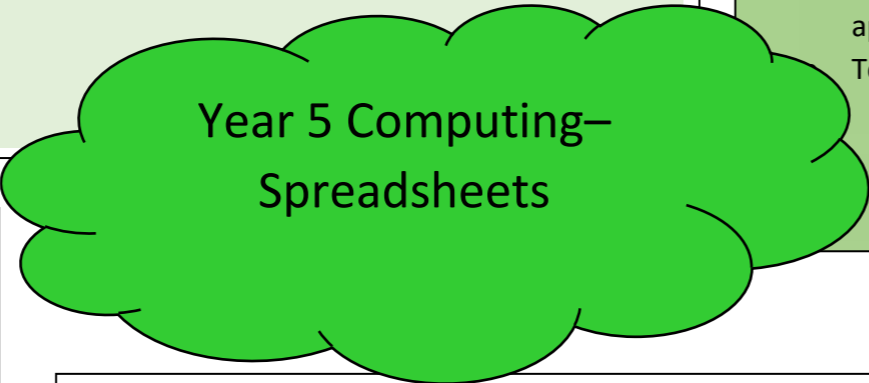
The Big Picture

This unit is very purposeful for children as they are likely to use spreadsheets in future projects, careers and in personal life. Spreadsheet programs are enormously flexible, familiar, and relatively easy to use. As such, they can increase both the breadth and depth of the topics covered in class.

What do we already know?

Knowledge Retrieval:

- To explore how the numbers are entered into cells can be set to either currency or decimal.
 - To explore the use of the display of decimal places.
 - To find out how to add formulae to a cell.
 - To explore the use of the timer, random number and spin button tools.
 - To use the line graphing tool in 2Calculate with appropriate data.
- To interpret a line graph to estimate values between data readings.



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Key unit objectives

- 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 spreadsheet to model a real-life problem.
- To use formulae to calculate area and perimeter of shapes.
- To create formulae that use text variables.

Key Questions

- Can children create a formula in a spreadsheet to convert m to cm.
- Can children apply this to creating a spreadsheet that converts miles to km and vice versa?
- Can children use the 'how many' tool?
- Can children use a spreadsheet to work out the area and perimeter of rectangles?
- Can children create simple formulae that use different variables?

Key vocabulary and understanding for concept connectors

Average – a feature that allows a user to find the average values of selected cells.

Copy and paste – a way to copy information from the screen into the computer's memory and paste it elsewhere without re-typing.

Charts – use this button to create a variety of graph types for the data in the spreadsheet.

Formula – use the formula wizard or type into the formula bar to create a formula in a cell, this will calculate the value for the cells based upon the value of other cells in the spreadsheet.

Formula wizard – the wizard guides you in creating a variety of formulae for a cell.

Random tool – click to give a random value between 0 and 9 to the cell.

Spin tool – adds or subtracts 1 from the value of the cell to its right.

Timer – when placed in the spreadsheet, click the time to add 1 to the value of the cell to its right every second until it is clicked again.

Spreadsheet – a computer program that represents information in a grid of rows and columns.

Columns – vertical reference points for the cells in a spreadsheet.

Rows – vertical reference points for the cells in a spreadsheet.

Cells – an individual section of a spreadsheet grid.



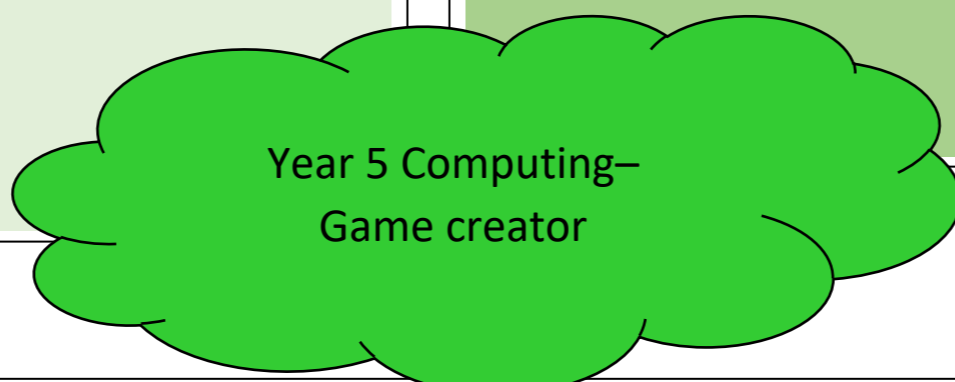
The Big Picture

This unit turns children into creators. It gives them an idea of what it might be like to create their own start up when they are older, to present an innovative idea to the world, or use their creativity to make important changes. It also provides designers and players with the opportunity to make meaningful decisions in relation to playing the game.

What do we already know?

Knowledge Retrieval:

This is a starter unit, there is no knowledge needed to begin this unit.



Year 5 Computing-
Game creator

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Key unit objectives

- To introduce the 2DIY 3D tool.
- To begin planning a game.
- To design the game environment.
- To design the game quest to make it a playable game.

Key Questions

- Can children review and analyse a computer game?
- Can they describe some of the elements that make a successful game?
- Can they begin the process of designing their own game?
- Can they upload images or use the drawing tools to create walls, floor, and roof?
- Can they design characters for their game?
- Can they write informative instructions so others can play it?
- Can they evaluate their own and their peers' game to help improve their design?

Key vocabulary and understanding for concept connectors

Animation – creating an illusion of movement.

Computer game – a game played using a computer, typically a video game.

Image – a picture displayed on the computer screen.

Instructions – detailed information about how something should be done or operated.

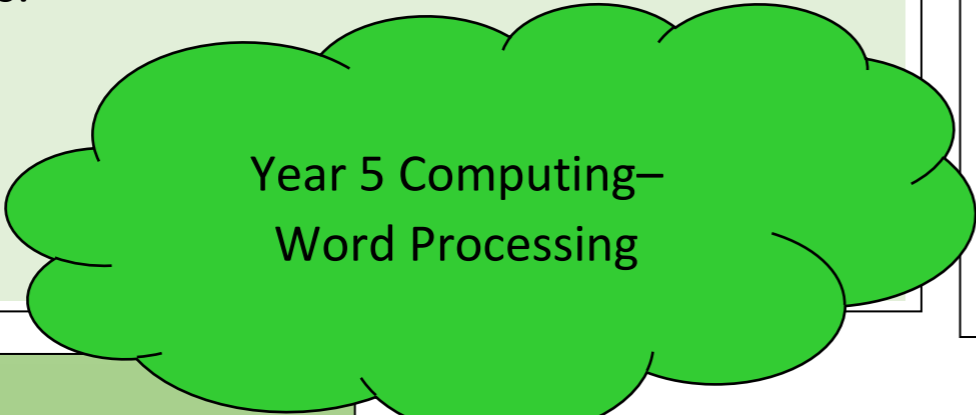
Interactive – responding to a user's input on a computer or device.

Playability – a measure of either the ease by which a video game may be played, or of the overall quality of its gameplay.



The Big Picture

Knowing how to organise information in a document allows a person to convey a message effectively. Word processing provides the foundation to complete a myriad of assignments such as booklets, reports, research summaries, newsletters, journals, and biographies. It can also be applied to personal and work-related tasks.



Year 5 Computing-
Word Processing

What do we already know?

Knowledge Retrieval:

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

Key vocabulary and understanding for concept connectors

Copyright – when an image, logo, or idea has a legal right to not be copied or used without the owner’s permission.

Cursor – the flashing vertical line that shows your place in a Word document.

Document – a type of file which shows written information and/or images and sometimes charts and tables.

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

Merge cells – a tool you can use when making a table to join cells which are next to each other in columns or rows.

Paragraph formatting – when you change the format of the text in a paragraph, including how the text is aligned and spaced.

Template – a ready-made outline of a document you might want to adapt, such as a letter or certificate.

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

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Key unit objectives

- To know what a word processing tool is for.
- To add and edit images to a word document.
- To know how to use word wrap with images and text?
- To change the look of text within a document.
- To add features to a document to enhance its look and usability.
- To use tables within MS Word to present information.
- To introduce children to templates.

Key Questions

- Can they use the word count tool to check the length of a document?
- Can they use bullets and numbering tools?
- Do children know how to add images to a Word document?
- Can children understand wrapping of images and text?
- Are children able to add text boxes and shapes?
- Can they add hyperlinks to an external website?
- Can children format a page using a combination of images, headers and columns?



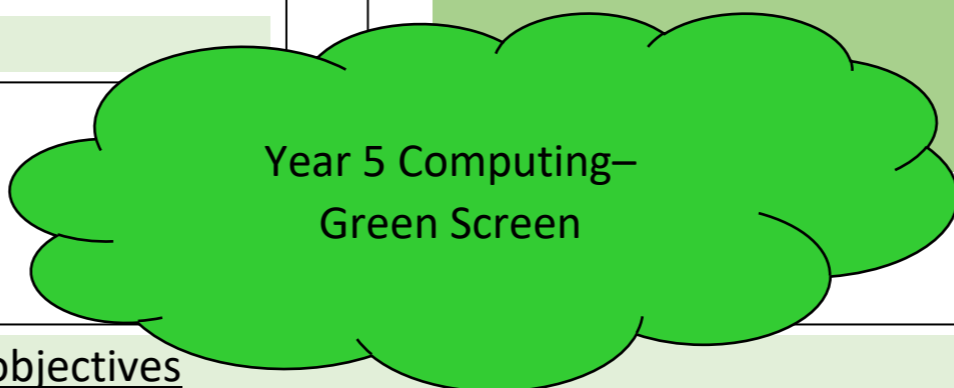
The Big Picture

In this unit, the opportunity to use and develop skills within Green Screen technology, offers children opportunities for expressive, process-oriented work that can be shared as a class and with families. It also allows students to discuss, evaluate or reflect on their learning using their imagination and digital skills. By using Green Screen, children are able to use their creative thinking to inspire others and to explore the powers of technology.

What do we already know?

Knowledge Retrieval:

- To capture images and videos using the installed camera.
- To save images to a device.
- To find and select images from a device and input into an application.
- To consider the target audience.



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Key unit objectives

- To understand the various roles and responsibilities in film making.
- To explain the process of making films and the various stages involved.
- To know the importance of clear communication with one another during the filmmaking process.
- To choose the appropriate backdrop for a still image or video.

Key Questions

- Do they consider audience when editing a simple film?
- Do they know how to prepare and then present a simple film?
- Can they use ICT to record sounds and capture both still and video images?
- Can they capture sounds, images and video?
- Do they recognise the roles and responsibilities involved in film making?

Key vocabulary and understanding for concept connectors

Green Screen – a blank green background that can be used to create special effects in a film.

Special effects – visual or sound effects introduced into a motion picture, video recording, or taped television production.

Backdrop – the scenery or ground that is behind a main figure or object.

Timer – a device that measures time.