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.

Also in this unit, pupils will explore blogging. Blogging can help children's confidence; improve their self-expression and they can get a real sense of fulfilment from publishing their work. Whilst blogging, children are able to learn the craft of writing.

What do we already know?

Knowledge Retrieval:

- 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.

Year 6 Computing– Online Safety (see E-safety overview) & Blogging

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
- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Key unit objectives

- To identify secure sites by looking for privacy seals of approval.
- To review the meaning of digital footprint.
- To understand the importance of screen time balance.
- To identify the purpose of writing a blog.
- To plan the theme and content for a blog.
- To understand how to write a blog and a blog post.

Key Questions

- Do children understand how what they share impacts upon themselves and upon others in the long-term.
- Can children understand how a blog can be used as an information text?
- Do they understand the key features of a blog?
- Can they create a blog or blog post with a specific purpose?
- Can children post comments and blog posts to an exciting class blog?

Key vocabulary and understanding for concept connectors

Digital footprint – the information about a person that exists on the internet as a result of their online activity.

Phishing – the practice of sending an email pretending to be from reputable companies in order to persuade individuals to reveal personal information.

Screen time – time spent using a device.

Spoof website – a website that uses dishonest design to trick users into thinking that it represents the truth.

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.

Blog page – a webpage onto which blog posts are hosted.

Blog post – a piece of writing or other item of content published on a blog.

Icon – a symbol or graphic representation on a screen.

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 6 Computing– Coding

What do we already know?

Knowledge Retrieval:

- 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.

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
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- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Key unit objectives

- To design a playable game with a timer and a score.
- To plan and use selection variables.
- To understand how the launch command works.
- To use functions and understand why they are useful.
- To use flowcharts to test and debug a program.

Key Questions

- Can they explain how an algorithm works?
- Can they detect errors in a program and correct them?
- Can they check and refine a series of instructions?
- Can they plan a program which includes a timer and a score?
- Can they debug when things do not run as expected?
- Can they follow flowcharts to create and debug code?

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.

Flowchart – a diagram which represents an algorithm.

Nesting – when you write a command inside something else.

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

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.

Year 6 Computing– Spreadsheets

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.

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
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- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

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 are 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 convers 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

It is important for children to be aware of the importance of technology and networks in education. Networking enables children to improve engagement, skills and knowledge. It gives them a better understanding of how they can share files faster and more reliably which prepares them for networking in the wider world.

What do we already know?

- Knowledge Retrieval:
- To know there are many ways to communicate.
- To know that photos, videos and documents can be shared online.

Year 6 Computing– Networks

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
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- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Key unit objectives

- To discover what the children know about the internet.
- To find out what a LAN and WAN are.
- To find out how we access the internet in school.
- To research and find out about the history of the internet.
- To think about what the future might hold.

Key Questions

- Do children know the difference between the World Wide Web and the internet?
- Do children understand how their school network works?
- Can children explain their findings about the history of the internet?
- Can children consider some of the major changes in technology which have taken place?

Key vocabulary and understanding for concept connectors

Internet – a global computer network providing a variety of information and communication facilities, consisting of interconnected networks using standardised communication protocols.

World Wide Web – an information system on the internet which allows document to be connected to other documents by hyperlink texts.

Network – several interconnected computers, machines, or operations.

Router – a device which forwards data packet to the appropriate parts of a computer network.

Network cables – used to connect and transfer data information between computers and routers.

Local Area Network (LAN) – a computer network that links devices within a building or group of adjacent buildings (typically one with a radius of less than 1km)

Wide Area Network (WAN) – a computer network in which the computers connected may be far apart, generally having a radius of more than 1km.

Wireless – the ability to transmit data from one device to another without using wires.

The Big Picture

In this unit, children will have the opportunity to design and make their own quizzes for a younger audience. Not only will this help them to consider the content they are creating but they will also have the responsibility of the design of the quiz.

Year 6 Computing– Quizzing

What do we already know?

Knowledge Retrieval:

- To know how to search a database.
- To have a good understanding of their audience.
- To know how to save images to a device.

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
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Key unit objectives

- 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.

Key Questions

- Can children use the 2DIY activities to create a picture-based quiz?
- Do children consider the audience's ability level and interests when setting the quiz?
- Do children understand the different question types within 2Qujiz?
- Have children used 2investigate quiz to answer quiz questions?

Key vocabulary and understanding for concept connectors

Audience – the people giving attention to something.

Collaboration – the action of working with someone to produce something.

Concept map – a tool for organising and representing knowledge. They form a web of ideas which are all interconnected.

Database – a structured set of data held in a computer, especially one that is accessible in various ways.

Quiz – a test of knowledge, especially as a competition between individuals or teams as a form of entertainment.

Year 6 Computing– Green Screen

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 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.
- To save an image to a device.

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
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- Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Key unit objectives

- To create a still image with a backdrop, using Green Screen.
- To consider the position of props in Green Screen.
- To begin to understand the importance of continuity in film making.
- To create a video in a small group and understand their roles and responsibilities.

Key Questions

- Can they select a clear image to use as a backdrop?
- Does their image look effective?
- Can they use props appropriately and understand how they need to be positioned?
- Do they understand why continuity is important in film making?
- Are they able to work in a small group to create a short video?

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.

Props – any moveable item that can be seen on film.