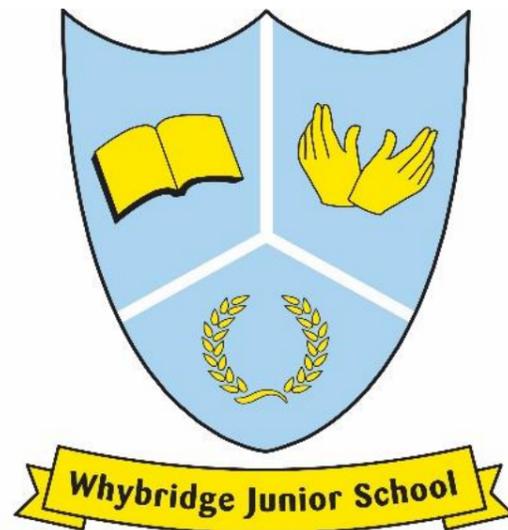


Whybridge Junior School



Computing Curriculum Progression and Overview

COMPUTING LONG TERM MAP

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	We are presenters	We are communicators	We are bug fixers	We are vloggers	We are programmers	We are opinion pollsters
Year 4	We are software developers	We are musicians	We are meteorologists	We are HTML editors	We are co-authors	We are toy designers
Year 5	We Are Artists	We Are Game Developers	We Are Cryptographers	We Are Bloggers	We Are Architects	We Are Web Developers
Year 6	We are app developers	We are app planners	We are interface designers	We are market researchers	We are marketers	We are Project managers

COMPUTING OVERVIEW

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	<p>We are presenters</p> <ul style="list-style-type: none"> ❖ Select, use and combine 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. ❖ Work with various forms of input and output. ❖ Use technology safely, respectfully and responsibly. 	<p>We are communicators</p> <ul style="list-style-type: none"> ❖ 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. ❖ 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. 	<p>We are bug fixers</p> <ul style="list-style-type: none"> ❖ Debug programs that accomplish specific goals. ❖ 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. 	<p>We are vloggers</p> <ul style="list-style-type: none"> ❖ Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web. ❖ 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 content that accomplish given goals, including collecting, analysing, evaluating and presenting information. ❖ Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>We are programmers</p> <ul style="list-style-type: none"> ❖ Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. ❖ Use sequence ... in programs; work with variables and various forms of input and output. ❖ Use logical reasoning to detect and correct errors in algorithms and programs. ❖ Select, use and combine a variety of software ... to design and create ... content that accomplishes given goals, including ... presenting ... information. 	<p>We are opinion pollsters</p> <ul style="list-style-type: none"> ❖ 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. ❖ 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.
Year 4	<p>We are software developers</p> <ul style="list-style-type: none"> ❖ Design, write and debug programs that accomplish specific goals. ❖ 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. 	<p>We are musicians</p> <ul style="list-style-type: none"> ❖ Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. ❖ Understand computer networks including the internet; ... and the opportunities they offer for communication and collaboration. ❖ 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. 	<p>We are meteorologists</p> <ul style="list-style-type: none"> ❖ Work with variables and various forms of input and output. ❖ Use logical reasoning to explain how some simple algorithms work. ❖ 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. 	<p>We are HTML editors</p> <ul style="list-style-type: none"> ❖ 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 technology safely, respectfully and responsibly; know a range of ways to report concerns and unacceptable behaviour. ❖ Use and combine a variety of software (including internet services) to accomplish given goals, including presenting information. 	<p>We are co-authors</p> <ul style="list-style-type: none"> ❖ Solve problems by decomposing them into smaller parts. ❖ 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. ❖ Use ... a variety of software (including internet services) ... to ... create ... content ... including ... presenting information. ❖ Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>We are toy designers</p> <ul style="list-style-type: none"> ❖ Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. ❖ Use sequence, selection, and repetition in programs; work with 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.
Year 5	<p>We are artists</p> <ul style="list-style-type: none"> ❖ Use sequence, selection, and repetition in programs; work with 	<p>We are game developers</p> <ul style="list-style-type: none"> ❖ Design, write and debug programs that accomplish specific goals, including controlling or simulating 	<p>We are cryptographers</p> <ul style="list-style-type: none"> ❖ Use logical reasoning to explain how some simple algorithms work and to 	<p>We are bloggers</p> <ul style="list-style-type: none"> ❖ Understand computer networks including the internet; how they can provide multiple services, such 	<p>We are architects</p> <ul style="list-style-type: none"> ❖ Use search technologies effectively, appreciate how results are selected and 	<p>We are web developers</p> <ul style="list-style-type: none"> ❖ Understand computer networks including the internet; how they can provide

	<p>variables and various forms of input and output.</p> <ul style="list-style-type: none"> ❖ Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. ❖ 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. 	<p>physical systems; solve problems by decomposing them into smaller parts.</p> <ul style="list-style-type: none"> ❖ 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. ❖ 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... 	<p>detect and correct errors in algorithms and programs.</p> <ul style="list-style-type: none"> ❖ 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>as the world wide web; and the opportunities they offer for communication and collaboration.</p> <ul style="list-style-type: none"> ❖ 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. 	<p>ranked, and be discerning in evaluating digital content.</p> <ul style="list-style-type: none"> ❖ 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. 	<p>multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration.</p> <ul style="list-style-type: none"> ❖ 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.
<p>Year 6</p>	<p>We are app developers</p> <ul style="list-style-type: none"> ❖ 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 sequence, selection, and repetition in programs; work with variables and various forms of input and output. ❖ Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. ❖ Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 	<p>We are app planners</p> <ul style="list-style-type: none"> ❖ 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. ❖ Work with variables and various forms of input and output 	<p>We are interface designers</p> <ul style="list-style-type: none"> ❖ 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. ❖ 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. ❖ Be discerning in evaluating digital content. ❖ Recognise acceptable and unacceptable behaviour. ❖ Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 	<p>We are market researchers</p> <ul style="list-style-type: none"> ❖ 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 search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. 	<p>We are marketeers</p> <ul style="list-style-type: none"> ❖ 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. 	<p>We are project managers</p> <ul style="list-style-type: none"> ❖ Solve problems by decomposing them into smaller parts. ❖ 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. ❖ Be discerning in evaluating digital content. ❖ Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.

COMPUTING PROGRESSION

	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
AUTUMN	<p><u>We are presenters</u> I can explain the different features of a sports programme. I can identify the different features of a sports programme. I can accurately use a video camera. I can record footage to use. I can upload and edit my footage onto a computer. I can record audio for my video. I can export my final video into a standard format. I can record original and interesting footage. I can use different editing tools for my video.</p> <p><u>We are communicators</u> I can explain how email and video conferencing works. I can use email and video conferencing to communicate. I can write an email to communicate with other people. I can use video conferencing to communicate with other people. I can explain how the internet and the web are different. I can evaluate my work. I can explain what worked well and what needs to change. I can explain some of the dangers of emails and opening attachments.</p>	<p><u>We are software developers</u> I can design an interactive educational game. I can develop an interactive educational game. I can put Scratch blocks in the correct order. I can use the 'if', 'then' and 'else' blocks accurately. I can use the 'random number' block accurately. I can use variables accurately. I can include sound in my game. I can identify and correct mistakes in my game. I can explain what an algorithm is. I can explain how the algorithm of my game works. I can explain what worked well in my game and what I would change.</p> <p><u>We are musicians</u> I can explain how technology can be used to create music. I can use sequencing software to create a piece of music. I can record my own sound samples. I can mix sound samples to create a piece of music. I can export my music into a compressed format. I can explain how people listen to and buy music through technology. I can edit sound samples. I can edit my music to improve it.</p>	<p><u>We are artists</u> I can create a basic tessellating pattern. I can explain what tessellating means. I can write a program to draw a simple shape. I can create a pattern using overlapping shapes. I can create a pattern using different repeated shapes. I can create a computer-generate image of a landscape. I can create a tessellating pattern using more complicated shapes. I can use repetition in Scratch to draw a geometric shape. I can explain how repetition works in Scratch. I can use the tile clone tool accurately to create a pattern.</p> <p><u>We are game developers</u> I can create a storyboard for an algorithm for my game. I can explain what an algorithm is. I can create sound and graphics in Scratch. I can put instructions in the correct order for my game. I can create and add music for my game. I can use selection and repetition in my game. I can explain how selection works. I can explain how repetition works. I can add instructions to my game. I can animate my characters by creating different graphics for them. I can use variables in my game. I can explain how variables work. I can test my game to see that it works correctly. I can identify and fix bugs in my game. I can evaluate my game and discuss what worked well and what I could change.</p>	<p><u>We are app developers</u> I can explain what an algorithm is. I can create an algorithm for my app. I can write an algorithm for my app. I can convert my algorithm into code. I can test my algorithm to find the 'bugs' in my code. I can improve my algorithm to make it effective. I can use sequence and selection in my algorithm, I can use repetition in my algorithm. I can use variables in my algorithm. I can use procedures in my code. I can test my code to that it works correctly. I can evaluate my app and discuss what worked well and what I could change.</p> <p><u>We are app planners</u> I can explain what a computer is. I can explain that a smartphone is a type of computer. I can find geotagged photos on a map. I can explain what geotagged means. I can explain what GPS is. I can use GPS to find different media that has been geotagged. I can research apps that exist and explain the pros and cons of them. I can create and present a well-planned presentation. I can name and describe the inputs and outputs of smartphones. I can explain how inputs and outputs work. I can explain how an app can solve a problem. I can explain how search engines order web pages in a search ('page rank'). I can explain what a search engine is. I can plan and describe what my app is going to do. I can present my information to an audience. I can use various types of media to present my information. I can explain how smartphones connect to the internet through the phone network. I can explain how GPS works and how it can be used.</p>

<p>SPRING</p>	<p><u>We are bug fixers</u> I can make a simple drawing program. I can correct a mistake in a program. I can use different variables in a program. I can explain what variables are and how they work. I can describe how a simple maths/drawing program works. I can explain how the dialogue in a program works. I can explain how a simulator's game's program works. I can explain how I correct 'bugs' in a program. I can order the dialogue in a program in the correct order.</p> <p><u>We are vloggers</u> I can find images using Google. I can find facts using Google. I can understand the difference between fact and opinion. I can use the internet safely and responsibly. I can understand that information on the internet is communicated as numbers. I can explain that search results are based on key words. I can design a presentation. I can deliver a good presentation to the people in my class.</p>	<p><u>We are meteorologists</u> I can use weather measurement equipment accurately. I can enter weather data into a spreadsheet. I can accurately measure weather data. I can create simple charts. I can make predictions about the weather. I can create a presentation for my weather forecast. I can include measurements and descriptions to photos. I can identify data that appears unusual.</p> <p><u>We are HTML editors</u> I can understand how the internet and the web are different. I can identify HTML in a web page. I can explain what HTML is. I can understand that web pages are written in HTML. I can use some HTML tags. I can edit the HTML for a web page. I can explain what a URL is. I can explain the parts of a URL. I can explain how important links are for the web. I can create my own web page using HTML. I can explain what HTTP is. I can explain how HTTP works.</p>	<p><u>We are cryptographers</u> I can explain what Morse code is. I can explain when and why Morse code was used. I can explain what semaphore is. I can send messages in Morse code and semaphore. I can explain what the Caesar cipher is. I can explain what a substitution cipher is. I can create messages using the Caesar and substitution ciphers. I can decode messages using the Caesar and substitution ciphers. I can explain how Morse code and semaphore are similar and different from the internet. I can check a web page to see if it is encrypted. I can explain the algorithm for the Caesar cipher. I can decode a message that has used a random substitution cipher.</p> <p><u>We are bloggers</u> I can explain what a blog is. I can understand that there are different platforms for blogs. I can write my own blog post. I can comment on a blog post. I can include an image, audio or video to a blog post. I can understand that blog posts are stored as HTML. I can explain what HTML is. I can present my blog to an audience. I can discuss the effectiveness of my blog.</p>	<p><u>We are interface designers</u> I can begin to draw my ideas for the design of my app. I can create screen layouts for my app using different tools. I can discuss how people will use my app. I can find and use media assets for my app. I can create a user-friendly design of my app. I can create my own media assets for my app. I can explain how different parts of my app will work together. I can create user-friendly screen layouts for my app using different tools. I can find and credit media assets that I use from other places correctly. I can discuss the effectiveness of my layout/app and what works well. I can evaluate the effectiveness of my layout/app and what I would change.</p> <p><u>We are market researchers</u> I can create a survey online. I can explain what a survey is and why it is helpful to use. I can use simple charts to explain what my survey results show. I can conduct an interview or a focus group. I can use the information from interviews effectively. I can present my results in the most effective way. I can use tables or graphs to explain what my results show. I can use an audio recorder or camera to record an interview independently. I can explain what my audio or video recorded means for my results. I can create questions for my survey that are clear and balanced. I can use software to explain what my survey results show. I can collect information and ideas from different places for my presentation. I can choose the most effective software for my project. I can independently conduct my own research.</p>
<p>SUMMER</p>	<p><u>We are programmers</u> I can create a storyboard for an animation. I can include action and dialogue in my storyboard. I can write a computer program for an animation. I can put Scratch blocks in the correct order. I can correct mistakes in my program. I can create sound and graphics for my animation. I can explain how my storyboard and program are linked. I can use a 'repeat' block in my program. I can find and correct 'bugs' in my program.</p> <p><u>We are opinion pollsters</u> I can collect data through the internet. I can use software to collect data. I can use software to present the results of my data. I can explain what information my data tells me.</p>	<p><u>We are co-authors</u> I can find an article on Wikipedia. I can explain what Wikipedia is. I can create my own article for Wikipedia. I can edit my article for Wikipedia. I can edit the HTML for a web page. I can explain what HTML is. I can research information accurately. I can identify articles that are accurate and reliable. I can understand the difference between fact and opinion. I can edit content on Wikipedia. I can explain how important Wikipedia's Five pillars are.</p> <p><u>We are toy designers</u> I can design a toy with a computer-controlled input.</p>	<p><u>We are architects</u> I can create simple objects using a program. I can create a simple gallery space using a program. I can create a virtual tour of my gallery. I can identify the features of an art gallery. I can create a detailed 3D object. I can identify common characteristics of art galleries using the web. I can create complex, compound objects using software. I can create a narrated walkthrough of my virtual art gallery.</p> <p><u>We are web developers</u> I can explain what a search engine is. I can explain how Google works.</p>	<p><u>We are marketers</u> I can explain why it is important to market a product. I can explain the key features of effective marketing. I can create a marketing flyer that includes images and text. I can create a website for my app that includes images and texts. I can record my own video or find video and content to use for my app advert. I can create a persuasive and well-designed marketing flyer for my app. I can explain what persuasive means. I can explain why it is important to have a persuasive flyer. I can plan and create a well-designed and user-friendly website for my app. I can explain why E-Safety is important.</p>

	<p>I can understand how it is important to keep a person's data private. I can explain how the internet can collect data.</p>	<p>I can design a toy with a computer-controlled output. I understand the difference between output and input. I can explain what output and input is. I can write a program to show how my toy would produce output. I can use Scratch to test how input and output would work in my work. I can use Scratch to create a version of my toy. I can find and correct 'bugs' in my program. I can explain how I find and correct 'bugs' in my program. I can evaluate my toy and discuss what worked well and I would change.</p>	<p>I can explain how Google orders web pages in a search ('page rank'). I can name different search engines. I can create and organise content about E-Safety. I can explain what E-Safety is. I can explain why E-Safety is important. I can explain how to use the web correctly and safely. I can decide if web sources are balanced and of a high quality. I can proofread and correct mistakes in others' content. I can use different tools to get the best results when searching for something on the web. I can find and use information accurately. I can present my information to an audience.</p>	<p>I can understand that I am responsible for the safety of my app. I can choose software that is best suited for my marketing. I can explain what a host platform is. I can choose the most effective platform to host my website. I can present my information to an audience.</p> <p><u>We are project managers</u> I can explain what the role of a project manager is. I can plan out the main steps of my project. I can explain that a project is divided into steps and tasks. I can plan out the main tasks of my project. I can identify the resources I need to complete my project. I can create original content for my app. I can predict how effective the content on my app is going to be. I can list the different parts of my app that will need to be created. I can find and use content from different sources to use in my app. I can find and use credit content correctly. I can present my project to an audience. I can evaluate and discuss what worked well on my project.</p>
<p>Key Vocabulary</p>	<p>Algorithm: A set of instructions/rules that helps solve a problem or achieve an objective. These instructions need to be broken down into the smallest possible steps. Browser: A piece of software that enables a user to locate, retrieve and display information on the world wide web (such as Google). Bugs: Errors caused in a program. Computer networks: The connection between one computer and another. Debug: Fixing the errors in a program (cause by a 'bug'). Hardware: Physical items of computing kit, such as hard drives, printers and scanners. Input: Data given to a computer (using a keyboard or a mouse). Internet: A global network that connects computers to local networks using different tools (routers/fibreoptic cables/radio connections). Output: The information produced by the computer processing system (shown through the monitor or through the speakers). Programs: A stored set of instructions that has been encoded into a language that the computer understands. This then creates some form of computation and processes the input or the data to create an output. Repetition (Loop): When one or more instructions are repeated until a condition is satisfied or until the program is stopped. This is one of the 3 basic structures used by algorithms and programming.</p>	<p>Algorithm: A set of instructions/rules that helps solve a problem or achieve an objective. These instructions need to be broken down into the smallest possible steps. Anchor tag: The ... tag in HTML that creates a hyperlink. Browser: A piece of software that enables a user to locate, retrieve and display information on the world wide web (such as Google). Computational thinking: Used to describe a collection of skills derived from the study and practise of computer science. Computational thinking = critical thinking skills + power of computing. Debug: Fixing the errors in a program. The term 'bug' was used by pioneer Grace Hopper. Decomposing: This can also be known as factoring. Decomposing is breaking down a problem into smaller, manageable chunks that can then be solved separately. Hardware: Physical items of computing kit, such as hard drives, printers and scanners. HTML (hypertext mark-up language): The language used for web pages. HTML tags: The information in web pages that describes the form or structure of part of a page (e.g. the image or paragraph). Hyperlinks: Texts or images that, when clicked, open another page or moves to another part of the document. HTTP (hypertext transfer protocol): HTTP is the standard protocol for the request and transmission of HTML web pages (between the browser and the web server).</p>	<p>Algorithm: A set of instructions/rules that helps solve a problem or achieve an objective. These instructions need to be broken down into the smallest possible steps. Bitmap: A way of representing images as an array of pixels (dots). Blog: An online journal or website made of a series of individual posts, usually displayed in reverse chronological order. Buggy code: Computer programs with mistakes. Caesar cipher: A simple cryptographic system where the plain text is encrypted by shifting each letter along the alphabet a certain, agreed number of places. CAD (computer-aided design): Using computer software to design real-world artefacts. CSS (cascading style sheets): A document that describes the format and presentation of HTML content on the web. Computer networks: Computers and their connections, allowing data to be transferred (at high speed) between one computer and another. Cryptanalysis: The process of decrypting an encrypted message without prior access to the encryption key. Cryptograph: The science of keeping communication and information secret. Debug: Fixing the errors in a program. The term 'bug' was used by pioneer Grace Hopper. Decrypt: To convert an encrypted message into plain text so that it can be read and understood.</p>	<p>Algorithm: A set of instructions/rules that helps solve a problem or achieve an objective. These instructions need to be broken down into the smallest possible steps. App: Short for application - a program from a smartphone or tablet computer that has been designed to achieve a specific goal. Creative commons: A licensing scheme where the creator of an original work allows others to use it without seeking further permission. Debug: Fixing the errors in a program. The term 'bug' was used by pioneer Grace Hopper. Digital signage system: The use of large computer screens as displays of visual information, sometimes including video. Gantt charts: Project management bar charts that are used for showing the schedule and dependencies for component tasks in a project. Geotagging: The process of tagging media (e.g. Photographs) with geographical identification information (using latitude and longitude coordinates). GPS (global position systems): This system allows a user to determine their exact location, using a network of military satellites. HTML (hypertext mark-up language): The language used for web pages. Interface: The link between one system and another (e.g. The user of a program and the computer that it is running on). MP4: A standard format for video footage.</p>

	<p>Selection: Selection is about choice. This is when an algorithm or program branches into different directions. Choice can be made in different ways, including by the user as in a quiz program or by a sensor. This is one of the 3 basic structures used by algorithms and programming.</p> <p>Sequence: A sequence is a set of actions or events that must be carried out in the same order every time. This is one of the 3 basic structures used by algorithms and programming.</p> <p>Software: The programs that enable computers to undertake specific functions.</p> <p>Spam: Unwanted advertising, normally by e-mail.</p> <p>Sprite: A computer graphics object (Scratch) that can be controlled.</p> <p>Variables: These are programming structures that can change or be changed. Variables can contain numbers or even text.</p> <p>Web server: A service running on a computer that returns data for a web page.</p> <p>World wide web: A service provided by computers connected to the internet (web servers). On the internet, there are pages of hypertext (web pages) which is then transmitted to users.</p>	<p>Interface: The link between one system and another (e.g. The user of a program and the computer that it is running on).</p> <p>Logical reasoning: Logical reasoning is the systematic application of rules to problem solving and task completion. These rules could be mathematical, logical, programming, grammatical, engineering or even scientific. This means that pupils use an appropriate system of rules to plan and evaluate their work.</p> <p>Micro blog: A form of blog where posts are short, such as Twitter.</p> <p>Prototype: An early sample of a product or program built to test the concept.</p> <p>Pseudocode: An informal written description of an algorithm.</p> <p>Repetition (Loop): When one or more instructions are repeated until a condition is satisfied or until the program is stopped. This is one of the 3 basic structures used by algorithms and programming.</p> <p>Simulation: Using a computer to model the state and behaviour of real-world systems.</p> <p>URL (uniform resource locator): Used for specifying the location on the internet of certain data files.</p>	<p>Encrypt: To convert a plain, readable message into an encrypted form so that it cannot be read by those without a secret key.</p> <p>Firewall: A service that protects a local network from external access.</p> <p>HTML (hypertext mark-up language): The language used for web pages.</p> <p>Hyperlinks: Texts or images that, when clicked, open another page or moves to another part of the document.</p> <p>Logical reasoning: Logical reasoning is the systematic application of rules to problem solving and task completion. These rules could be mathematical, logical, programming, grammatical, engineering or even scientific. This means that pupils use an appropriate system of rules to plan and evaluate their work.</p> <p>Morse code: A simple code for converting letters and numbers into patterns of short and long electrical pulses.</p> <p>Page rank: Google's main search algorithm in which search results are ranked according to the number and quality of inbound links.</p> <p>Semaphore: A simple code for converting letters and numbers into different positions of two flags, one held in each hand.</p> <p>Tessellation: A regular pattern of one shape that fills a space without overlapping or leaving spaces between.</p> <p>Vector graphics: A way of representing an image by specifying the lines, arcs and regions from which it is made.</p> <p>Web server: A service running on a computer that returns HTML data from a web page when it receives a request via the local network or the internet.</p>	<p>Page rank: Google's main search algorithm in which search results are ranked according to the number and quality of inbound links.</p> <p>Pseudocode: An informal written description of an algorithm.</p> <p>QR code: A two-dimensional binary (black/white) pattern encoding text (typically URLs) for easy access from smartphones or tablets.</p> <p>URL (uniform resource locator): Used for specifying the location on the internet of certain data files. The URL includes the protocol used to transmit the data, the computer on which it is stored, the file path and the file name of the data.</p> <p>Widget: A widget is an element of the graphical user interface that displays information or allows the user to control some aspect of the ap.</p>
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