Computing Overview Year 5 - 8

Year 5					
	Unit Overview and Driving Question	Disciplinary Knowledge	Substantive Knowledge	Language	Programs and Software
Autumn 1 **Audio engineers**	*How can I record and edit a radio jingle?* Remix, edit and record audio to create a radio jingle to promote climate change.	**Information Technology** • To be able to use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). • To be able to use folders to organise files. • To be able to search for an application on a computer/tablet. • To be able to identify and use appropriate hardware and software to fulfil a specific task. • To be able to remix and edit a range of existing and their own media to create content. • To be able to consider the audience when designing and creating digital content. • To be able to evaluate their own content against success criteria and make improvements accordingly. • To be able to record and playback a recording.	• To know audio can be recorded and edited.	Audio, record, playback, microphone, speaker, headphones, input, output, copyright, plagiarism, start, pause, stop, jingle, track, edit, trim, filter, arrange, save Sound, wave, loop, voice, effect, file, filter, undo,	Audacity or Bandlab Garage Band iPads or Computers
		• To be able to select an audio clip to trim and apply effects. • To be able to layer audio samples. • To be able to delete a section of audio. • To be able to save/export an audio file.		Export, MP3, volume, mixing, evaluate, feedback	
Autumn 2 **Real or Fake**	*Is everything we see online real?* Know how we communicate safely online, whether it is through online games, videos or text messages and the implications of negative actions online.	**Data** • To explain the difference between data and information. • To explain that different computer programs work with different types of data, e.g. text, number, video. **Digital Literacy:** • To be able to critically evaluate websites for reliability of information and authenticity. • To be able to demonstrate responsible use of an online services and know a range of ways to report concerns. • To explain what makes a strong password. • To explain the benefits and risks of sharing data online. • To be able to identify and explain why my personal information needs to be kept private and the potential impact on their digital footprint. • To know who to go to if they had concerns over online contact. • To be able to be discerning about what information they I gather, checking the validity of data and showing due respect to privacy and copyright. • To be able to use a search engine effectively to find information and images. **Computer Components and networks** • To explain the difference between a search engine and a web browser. Explain the basics of how search engines work, and that different search engines may give different results. • To be able to perform complex searches for information using advanced settings in search engines.	• To know and explain the impact of online mis- dis-information. • To know what information to keep private. • To know and explain why we can't trust everything on the internet. • To know what makes a strong password. • To know what is acceptable and unacceptable behaviour online.	Privacy, online identity, trustworthy, fans, followers, digital footprint, Misinformation, disinformation, bias, fact-checking, sources, Data, information, reliability, privacy, tracking, Password, security, encryption, hacking, two-factor authentication, Hacker, scam, encryption, phishing, breach	iPad or Laptop Showbie
Spring 1 **Selection in Quizzes**	*How do I add choice to my game by using selection and conditions?* Use a block-based programming language to selection by coding a quiz.	**Computer Science** • To recognise that different solutions may exist for the same problem. • To be able to predict what will happen in a program or algorithm when the input changes (e.g. sensor, data or event). • To be able to use selection in algorithms in programs to alter what happens when a condition changes, e.g. if…then. • To be able to create programs including repeat until loops. • To be able to evaluate a program and make improvements to the code or design accordingly.	To know a loop can be stopped when a condition is met. • To know conditions in computing allows the programme to flow in different directions.	implement, design, algorithm, program, debug, test, setup, selection, condition, outcome, share, evaluate, constructive	iPad or Laptop Showbie Scratch

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Spring 2 **Computing Influencers**	*Who are the key influences of innovation of technology?* Explore how we research and check information online is accurate before creating an eBook all about key influencers in computing and the impact they have had on the world.	**Information Technology** • To be able to type using fingers on both hands. • To be able to use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). • To be able to use folders to organise files. • To be able to search for an application on a computer/tablet. • To be able to identify and use appropriate hardware and software to fulfil a specific task. • To be able to remix and edit a range of existing and their own media to create content. • To be able to consider the audience when designing and creating digital content. • To be able to evaluate their own content against success criteria and make improvements accordingly. **Data** • To explain the difference between data and information. • To explain that different computer programs work with different types of data, e.g. text, number, video. **Digital Literacy** • To be able to demonstrate responsible use of an online services and know a range of ways to report concerns. • To be able to be discerning about what information they gather, checking the validity of data and showing due respect to privacy and copyright.	• To know how technology has changed over time. • To understand the positive and potentially negative impact technological changes have had on society. • To know key influencers on technology and explain the impact they have had. • To know how technology has changed over time. • To know how search engines rank websites • To know the difference between the internet and the world wide web.	Type, shortcut, search, hardware, software, remix, edit, digital content, data, information, report concerns, discerning.	iPad or Laptop Showbie
		• To identify how technology has impacted the world we live in.			
Summer 1 **Crab maze**	*How can I create a multiple level video game?* Use a block-based programming language to explore selection and variables when creating their own game.	**Computer Science** • To recognise that different solutions may exist for the same problem. • To be able to predict what will happen in a program or algorithm when the input changes (e.g. sensor, data or event). • To be able to use selection in algorithms in programs to alter what happens when a condition changes, e.g. if…then. • To be able to create programs including repeat until loops. • To be able to evaluate a program and make improvements to the code or design accordingly.	• To know a loop can be stopped when a condition is met. • To know conditions in computing allow the program to flow in different directions.	Sensors, predict, program, input, sensor, data, variables, repeat, until loops, evaluate, program, design, data, information.	iPad or Laptop Showbie Scratch
Summer 2 **Visual Storytelling**	*How can we shoot and edit a video?* Plan, record, remix and edit video to create a powerful visual story about the impact of global warming.	**Information Technology** • To be able to type using fingers on both hands. • To be able to use common keyboard shortcuts, e.g. ctrl C (copy), ctrl V (paste). • To be able to use folders to organise files. • To be able to search for an application on a computer/tablet. • To be able to identify and use appropriate hardware and software to fulfil a specific task. • To be able to remix and edit a range of existing and their own media to create content. • To be able to consider the audience when designing and creating digital content. • To be able to evaluate their own content against success criteria and make improvements accordingly. • To be able to create and edit a video clip by editing, trimming, splitting, layering and adding special effects such as green screen. **Digital Literacy** • To know where to find copyright free images and audio, and why this is important. • To be able to be discerning about what information they gather, checking the validity of data and showing due respect to privacy and copyright.	• To know video as moving pictures combined with audio. • To know video can be edited.	Type, shortcut, search, hardware, software, remix, edit, digital content, data, information, report concerns, discerning, copyright.	iPad or Laptop Showbie Green Screen Video recording (iPad)

YEAR 6					
	Unit Overview and Driving Question	Disciplinary Knowledge	Substantive Knowledge	Language	Programs and Software

Computing Overview Year 5 - 8

Autumn 1 **3D modelling**	*How is Computer Aided Design used to create 3D models?* Create a 3D model of a keyring by using CAD design software to promote a local business. Use formulas in a spreadsheet to calculate cost and profit.	**Information Technology** • To be able to organise files effectively using folders and files names. • To be able to use the advanced search tools when using a search engine to find specific information and images. • To be able to select, combine and remix a range of media to create original content (i.e. website, app, video, images). • To be able to consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share). • To be able to identify the most effective tools to present information for a specific purpose. • To be able to evaluate existing digital content in terms of effectiveness and design. • To know how to modify a 3D object in a computer programme by: o Repositioning o rotating in three dimensions o resizing o recolouring o duplicating o deleting **Data** • To know what a spreadsheet is and what it is used for. • To be able to use simple formulae in a spreadsheet to find out information from a set of data.	• To know computer aided design can make 3D models. • To know what a spreadsheet can organise and sort data.	2D, 3D, 3D object, 3D space, view, reposition, rotate, resize, recolour, duplicate, delete, Resize, colour, lift, rotate, position, select, duplicate, Placeholder, hollow, measure, align, duplicate, Modify, evaluate, improve, Cell, row, column, formula, data, input, output	Tinkercard Laptops or iPads Spreadsheets – Excel or Numbers
		• To be able to collect data for a purpose and plan out a spreadsheet to present it effectively, using relevant formulae. • To be able to produce graphs from data in a spreadsheet to answer a question. • • To be able to analyse and evaluate data and information in a spreadsheet, chart or database.			
Autumn 2 **Variables in Games**	*How can variables be used in code?* Utilise variables when designing and coding a game in a programming language.	**Computer Science** • To be able to plan out a program in detail, including task, algorithm, code and execution level. • To be able to debug common errors in programs and explain how to fix them. • To be able to create and use simple variables, e.g. to keep score. • To know key concepts (sequence, selection, repetition and variables) in a range of languages and contexts.	• To know what a variable is and that it can hold numbers (integers) or letters (strings).	Variable, change, name, value, sprite set, design, event, design, algorithm, debug, evaluate, improve	iPad or Laptop Showbie Scratch

Computing Overview Year 5 - 8

Spring 1 **Company Launch**	*What digital tools can you use to launch a company?* Combine and remix media to create an app prototype to fulfil a design brief.	**Digital Literacy** • To be able to explain that algorithms are used to track online activities with a view to targeting advertising and information. • To be able to explain why their personal information needs to be kept private and the potential impact on their digital footprint. • To know how to report concerns over online contact or content. • To be able to engage in online communities safely, respectfully and responsibly. • To be able to be discerning about what information they gather, checking the validity of data and showing due respect to privacy and copyright. **Information Technology** • To be able to type efficiently using both hands. • To be able to use a range of keyboard shortcuts. • To recognise that different devices may have different operating systems. • To be able to organise files effectively using folders and files names. • To be able to use the advanced search tools when using a search engine to find specific information and images. • To be able to select, combine and remix a range of media to create original content. (i.e. website, app, video, images). • To be able to consider all steps of the design process when creating content (e.g. identify problem, plan, create, evaluate, share). • To be able to identify the most effective tools to present information for a specific purpose. • To be able to evaluate existing digital content in terms of effectiveness and design.	• To know what an app is and its common features. • To know what a website is and its common features • To know why we use copyright-free images • To know whatwhen a hyperlink is meant byclicked, it takes the term 'fair use'user to another specified location (URL). • To know prototypes are used to plan and design digital content.	Algorithms, personal information, digital footprint, online communities, respectful, responsible, discerning, type, shortcuts, operating systems, organise, search engine, remix, media, present information	iPad or Laptop Showbie Powerpoint or Keynote
Spring 2 **Be internet kind and brave & #Life Skills**	*How can I be Internet Smart?* Explore how to be kind on the internet as well as how to report people or sites when things do not go to plan.	**Digital Literacy** • To know what makes a strong password and why this is important at school and in the wider world. • To be able to explain that algorithms are used to track online activities with a view to targeting advertising and information. • To understand that there are laws around the purchase of games; the production, sending and storage of images; what is written online; and around online gambling. • To be able to explain why their personal information needs to be kept private and the potential impact on their digital footprint. • To be able to identify acceptable and unacceptable behaviour online. • To know how to report concerns over online contact or content. • To be able to engage in online communities safely, respectfully and responsibly. • To be able to be discerning about what information they gather, checking the validity of data and showing due respect to privacy and copyright. • To be able to select, combine and remix a range of media to create original content. (ie, website, app, video, images).	• To know what cyberbullying is and the impact it can have on others. • To know who to contact when they are concerned. • To know how to use the internet to communicate positively (i.e. video calling friends and family). • To know what acceptable and unacceptable behaviour is online.	Password, algorithms, laws, personal information, digital footprint, acceptable, unacceptable, concerns, report, online communities, respectful, responsible, discerning, present information, remix, media	iPad or Laptop Showbie Sphero
Summer 1	**How do computers learn to make decisions?**	• To understand that artificial intelligence systems make decisions by following rules or identifying patterns in data, rather than by thinking or reasoning like humans.	• To know that artificial intelligence systems are trained using data and examples.	Algorithm, data, pattern, rule, classify, predict,	• iPad or laptop • Showbie

Artificial Intelligence (AI)	Computers don't "think" — they follow rules and learn patterns from data. Those patterns shape decisions.	• To recognise that algorithms, data, and variables work together to influence the decisions made by computer systems. • To understand that computers process inputs to produce outputs, and that changing the input data can change the outcome. • To recognise that AI systems can make errors when data is unclear, incomplete, or does not match previously learned patterns.	• To know that rule-based systems use if/then logic to make decisions. • To know that data can be grouped or classified using shared features. • To know that computers do not understand meaning, only patterns and instructions. • To know that increasing the amount of data does not always improve accuracy. • To know that computers may struggle to explain *why* a decision has been made.	feature, outcome, system, input, output	• Spreadsheet software (Excel or Numbers) • Presentation software (Keynote or PowerPoint)

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Summer 2 **Can we trust decisions made by AI?**	AI systems can be useful — but they can also be biased, misleading, or misused. Humans remain responsible.	• To understand that artificial intelligence systems can reflect bias present in the data they are trained on. • To recognise that AI-generated outputs are not always accurate, fair, or trustworthy. • To understand that algorithms influence the information people see online and can shape opinions and behaviour. • To recognise that humans are responsible for the design, use, and impact of AI systems.	• To know that biased or incomplete data can lead to unfair or misleading outcomes. • To know that images, text, and videos can be generated or altered using AI tools. • To know that not all online content is real or reliable, even if it appears convincing. • To know that algorithms are used to recommend content, advertisements, and information. • To know that ethical decisions about technology involve considering fairness, impact, and responsibility. • To know that people can question, verify, and challenge AI-generated content.	Bias, misinformation, trustworthy, data source, verify, manipulate, influence, ethical, responsibility, accountability	• iPad or laptop • Showbie (• Image editing software (Keynote, PowerPoint, or simple photo editing apps already available in school) • Presentation software (Keynote or PowerPoint)
YEAR 7					
AUTUMN	Unit Overview and Driving Question	Disciplinary Knowledge	Substantive Knowledge	Language	Programs and Software
Week 1	Setting a password File management Introduce touch typing	To be able to choose appropriate passwords to keep their accounts safe. To develop touch typing skills to be able to access the curriculum more effectively. To be able to create folders to store different subjects work in their user areas. To be able to type at a speed which allows access to the full course and use keyboard shortcuts to increase the effectiveness of their computer use.	To know the factors that effect the strength of a password. To understand the need for file management.	File management Password strength Folder File	
Week 2	Digital footprint	To know the actions we take online create a digit footprint. To be able to describe what their digital footprint will look.	To know what is included in a digital footprint.	Digital footprint Interactions Website	
Week 3	Phishing, pharming and smishing	To be able to identify defining elements of phishing, pharming and smishing and how to report	To understand the key elements that identify phishing/smishing communications.	Phishing Pharming Smishing Communications	
Week 4	Ethics – digital manufacturing and disposal	To understand what E-Waste is and the steps to take to reduce it.	To know that creating computers requires raw materials. To know that some of the disposal methods for electronic devices are unethical.	E-Waste Ethical / Unethical Impact Raw materials	
Week 5	Misinformation and reliable sources	To be inquisitive about the acceptance of information before it has been proven.	To know what a source is and how it can be used to check for reliability of data.	Reliable Source Data Information	

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Week 6-7	Abstraction and decomposition in everyday tasks	To understand that in Computing "a problem" is any scenario where a solution is being designed. To be able to use learning of computational thinking techniques to support decision making in a range of scenarios.	To know that decomposition is breaking a problem down into smaller parts. To know that abstraction is focuses on just the key elements of a problem and ignoring unnecessary details. To know an algorithm is steps to solve a problem. To know that algorithms are used in everyday life.	Abstraction Decomposition Elements Computational thinking	
Week 8-12	Block based programming using sequence and variables	When coding is running it and is edited it will need to be rerun for the changes to take effect. In block based programming the colours and shapes indicate which blocks can be connected to it and the purpose of that block. A program will only do exactly what you program it to do, it will not adjust based on mistakes.	To know variables are a named storage space in memory for data. To be able to create a range of programs using a block based programming language and sequence, selection and iteration. To know a bug is when something unexpected happens in a program.	Variable Selection Sequence Iteration Bug	
Week 9 Assessment	Computational thinking – Bebras competition	To understand that in Computing "a problem" is any scenario where a solution is being designed. To be able to use learning of computational thinking techniques to support decision making in a range of scenarios.	Assessment point	Abstraction Decomposition Elements Computational thinking	
Week 13	Parts of a PC / Storage devices	To be able to describe devices without using manufacturer specific names. To be able to identify what a device may be from how it looks.	To know output devices send data to the user and/or another device. To know the main internal parts of the computer are PSU, motherboard, CPU, RAM, HDD/SSD and expansion cards.	PSU CPU Motherboard RAM HDD	
Week 14	Hardware and software	To be able to describe software without using manufacturer specific names.	To know hardware is the physical elements of the computer. To know software is data stored on the computer with a purpose.	Software Hardware Applications	
Week 15	LAN and WAN	To be able to identify a network as either a WAN or a LAN.	To know LAN stands for Local Area Network. To know a LAN covers a small geographical area. To WAN stands for Wide Area Network. To know that WANS cover a larger distance and are usually connected by WAN.	LAN WAN ISP	
SPRING					

Week 1-3	Block based programming – selection and iteration (2nd project)	When coding is running it and is edited it will need to be rerun for the changes to take effect. In block based programming the colours and shapes indicate which blocks can be connected to it and the purpose of that block. A program will only do exactly what you program it to do, it will not adjust based on mistakes.	To know variables are a named storage space in memory for data. To be able to create a range of programs using a block based programming language and sequence, selection and iteration. To know a bug is when something unexpected happens in a program.	Variable Selection Sequence Iteration Bug	

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Week 4	The internet	To be able to discuss the WWW and the internet using their names appropriately.	To know the internet is a WAN. To know the WWW is the websites that are stored on the internet.	WWW Internet Web browser	
Week 5	Copyright design and patents act	To know how the Copyright design and patents Act is applied to their lives both at home and in school.	To be able to identify actions that break the Copyright, design and parents Act. To be able to use items that are covered by Copyright legally.	CDPA Author Permission	
Week 6	Assessment Week				
Week 7	Vector images	To be able to create vector images using a range of shapes. To understand how layering will effect the outcome of a vector images final outcome.	To know that images can be saved as lines and shapes.	Point Line Shape Layer	
Week 8-9	Presentation software	To understand how documents may be adapted for different purposes and audiences. To be able to create a presentation for a purpose.	To know a range of keyboard shortcut which support quicker interaction with projects e.g. cut, copy, paste, save, undo.	Shortcut Presentation Audience Purpose	
Week 10	Linear search	To be able to perform a linear search on a list of data.	To know a linear search works from left to right. To know a linear search will check each item in order. To know a linear search will stop when it finds the item it is looking for. To know a linear search will return a message of not found if it reaches the end of the list without finding the item it is looking for.	Algorithm Searching algorithm Comparison Termination	
Week 11	Spreadsheets	Clicking on a cell will give you it's reference. There are multiple ways of using a cell reference in a formula including typing it, clicking the cell or using the keyboard. Cell references can be filled down a column or across a row by dragging the fill handle.	To know a range of keyboard shortcut which support quicker interaction with projects e.g. cut, copy, paste, save, undo. To know spreadsheets have rows and columns. To know basic formula to allow a spreadsheet to perform calculations e.g. totalling, max, min, averages. To know data collection is designed using open and closed questions.	Cell Column Row Sheet Formula Cell reference	

SUMMER					
Week 1-2	Continued Spreadsheet	As above			
Week 3	Binary to denary	To be able to convert an 8 bit binary number into denary using a conversion grid.	To know that data sizes are measured in bits. To know that everything is stored on the computer as binary. To know the binary place values upto 8 bits.	Binary Denary Bit Place value	
Week 4	Assessment Week				

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Week 5-7	Flowcharts that contain selection, input, output and processing	To be able to create a flowchart for a range of scenarios.	To know the different flowchart shapes for terminators, inputs, outputs and processes. To know a flowchart is complete if all shapes have one flowline in and at least one out with the exception of terminators	Terminator Input Outut Process Decision	
Week 8	Logic gates – AND, OR, NOT	To be able to solve logic circuits using TRUE and FALSE as the inputs and outputs	To know what an AND, OR and NOT gate look like.	Logic gate Input Output	
Week 9-10	Word processing	To understand how documents may be adapted for different purposes and audiences. To be able to create a word processed document & a presentation for a purpose. To be able to use search engines for research and judge the results as trustworthiness	To know a range of keyboard shortcut which support quicker interaction with projects e.g. cut, copy, paste, save, undo.	Search engine Word processor Trustworthy Header Footer	
Week 11	Sound sampling	To be able to use samples to be able to draw out a sound wave on a graph.	To know analogue sound is in waves. To know for those waves to be stored on a computer they need to be sampled at regular intervals, the amplitude of the wave is measured and stored as binary.	Sample Interval Binary Amplitude	
Week 12	Bubble sort	To be able to complete a pass on a bubble sort swapping items in pairs. To only swap items that are directly next to each other and work left to right.	To know a bubble sort completes a pass when it has gone from one end to the other by comparing and swapping pairs of data. To know a bubble sort is complete when it has completed a pass without making a swap.	Algorithm Sorting algorithm Bubble sort Pass Flag	
Week 13	Representing text - ASCII	To convert a set of binary values into their ASCII letters.	To be able to state the number of bits used to store ASCII values. To understand that text characters are stored on the computer as binary.	Binary Ascii Character set	
Year 8					
AUTUMN	Unit Overview and Driving Question	Disciplinary Knowledge	Substantive Knowledge	Language	Programs and Software
Week 1-2	Ethics – impact of technology on society	To consider how technology has impact areas of society e.g. farming, self checkout, sports.	To know that the digital divide is where a group of individuals have more/less access to technology.	Society Impact Digital divide	
Week 3	GDPR	To understand how the GDPR applies to data that is stored about them.	To know who a company has to report a data breach to.	Breach GDPR ICO	
				Fine	
Week 4	Deepfakes and AI	To understand how to merge images together to create a new image using photo editing skills.	To know how deepfakes are created. To know a range of techniques for identifying deepfake and AI images.	Deepfake AI Merge Layers	
Week 5	Impact of algorithms on content feeds e.g. social media	To make informed choices when reacting to content received through social media.	To know the general steps a social media algorithm may use when recommending content to viewers.	Algorithm Social media Interactions	

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Week 6-7	Malware	Malware is software — understanding how software is written, executed, and interacts with systems is fundamental in being able to keep data safe.	To know malware is a term to describe many different types of malicious software e.g. keylogger, worm, ransomware. To know a virus spreads via a network and corrupts/deletes data. To know spyware covertly collects data from the user to share without their knowledge.	Malware Virus Spyware Trojan Worm	
Week 8	Denary to binary	To understand that when converting denary values to binary you need to start with the most significant bit. To be able to convert a denary number up to 255 into an 8 bit binary number using a conversion grid.	To know that any binary value ending with a 1 is an odd number.	Bit Most significant bit Binary Denary	
Week 9	Assessment week Computational thinking – Bebras competition	To be able to use learning of computational techniques in a range of scenarios that are more challenging.	Assessment point	Abstraction Decomposition Elements Computational thinking	
Week 10	Input and output devices	To be able to group device by their categories – input, output, internal and external.	To know an input device is used to send different inputs to the computer including sound and UI interactions.	Storage User interface Input Output	
Week 11	Primary and secondary storage	To know a USB is a connection interface and not a device. To be able to group devices by their categories – primary and secondary.	To know RAM stores data temporarily and is primary storage. To know secondary storage is used to store data permanently and to be able to identify devices that fall into this category.	Primary Secondary Interface	
Week 12	PC as a whole linking input, output and storage	To be able to connect a device inside a PC it has to go via the motherboard.	To know that all internal components of the computer are connected via the motherboard which in turn gives them power from the PSU.	PSU Motherboard Internal Hardware	
Week 13-14	Text based programming project including constants (half unit, second half in Summer term)	Key words in the programs library will appear in different colours, this can support creation and debugging. Indentations in code allow the programmer to see what is included inside selection and loops. Setting up a programming environment will support coding as you can see the code while it is running. Using shortcuts to be able to arrange windows in a programming environment. Data structure names should inform the user what data is saved inside of it to support development and maintenance.	To know constants are a named storage space in memory where data is stored that can not be changed while the program is running. To be able to create a range of programs using a text based programming language and sequence, selection and iteration.	Constant Debug Indentation Construct	

Week 15 (continues into next term)	Components of wired and wireless networks	To be able to identify different network devices by how they look. To be able to choose a server for a given requirement. To be able to identify and connect devices in a network. To be able to identify the full names of network acronyms NIC, WAP and ISP to aid with knowledge retention.	To know the roles of the NIC, router, switch, ethernet cables and firewall. To know the role of a WAP. To know a range of roles a server can provide. To know how to connect devices in a network so they can all share the connection. To know the internet connection is provided by an ISP. To know that the cloud is still a physical location that is connected to via the internet.	NIC Router Switch Ethernet Firewall	

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SPRING					
Week 1	Components of wired and wireless networks	As above			
Week 2-4	Creating flowcharts including repetition	To be able to create programs using flowcharts that loop so may not have a terminator.	To know the flowchart shape for decision is a diamond.	Decision Diamond Loop / Iteration	
Week 5-6	Spreadsheet formula for budgeting	To be able to create formula that will help interrogate data and predict budgeting requirements.	To know that spreadsheets will update their calculations automatically whenever a change is made.	Forecast Budget Formula Automatically	
Week 7	Assessment Point				
Week 8-9	Abstraction and decomposition using spreadsheets and databases.	To be able to use database searches to interrogate data to draw conclusions. The operators <= and >= will include the number in the search, otherwise it will be disregarded.	To know decomposition and abstraction can be used to investigate data and draw conclusions. To know spreadsheets will change the results based on formula.	Database Conclusion Operator Interrogate	
Week 10	Sound – bit depth and sample rate	To be able to use samples to be able to draw out a sound wave on a graph. To be able to label the graph with it's bit depth and sample rate using relative sizes.	To know the effects on a sound when the sample rate and/or the bit depth increases or decreases. To know the quality of sound can be effected by the sample rate and the bit depth. To understand why the quality of sound is important.	Bit depth Sample rate Quality	
Week 11 (continues into next term)	Presentation for a purpose using master pages	To be able to create a master slide for a presentation that is suitable for a designated target audience.	To know using master pages provides uniformity within a presentation.	Master page Uniformity Target audience Presentation	
SUMMER					
Week 1	Presentation for a purpose using master pages	As above			
Week 2	Mail merge in a word processed document	To be able to adjust the headers & footers of a document to make it formal. To be able to use mail merge to create a letter with different intended recipients.	To know headers & footers provides uniformity within a word processed document.	Mail merge Word processor Header	
			To know mail merges are used to create personalised, near identical documents	Footer	
Week 3-4	Bitmap images	To be able to create a bitmap image using squares. To be able to convert a bitmap image into it's binary form.	To understand that images are stored as binary. To know that bitmap images are made up of pixels.	Pixels Resolution Colour depth Meta data	
Week 5	Text based programming project including constants (continues from Autumn Term)	As autumn Term			
Week 6	Assessment Point				

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Week 7	Text based programming project including constants (continues from Autumn Term)	As autumn Term			
Week 8	Logic gate truth tables	To be able to complete truth tables using binary to represent TRUE and FALSE. To be able to create a truth table for each gate.	To know what the truth tables for an AND, OR and NOT gate look like.	Logic gate Truth table Boolean	
Week 9-10	HTML	To be able to create a basic webpage using HTML.	To know that HTML uses tags. To know a range of basic HTML tags and their uses.	Tag HTML Hyperlink	
Week 11	Merge sort	To be able to use a merge sort on a sample set of data.	To know that merge sort first splits the elements of data into individual lists. To know that merging and sorting the sub lists happens at the same time. To know the order in which the sort would take, first splitting, then merging.	Element List Sub list Data set	
Week 12	Binary search	To be able to perform a binary search on an even and odd size data set.	To know a binary search only works when the list is in order. To know a binary search will start by selecting the middle value. To know a binary search will compare the item it is looking for against the middle value. To know a binary search will stop if the searched item is the same as the middle item. To know a binary search when not finding the item it is looking for will discard the half of the list and the middle item where the item will not be. To know a binary search then repeats this process until the item is found or the list is size 1 and the item not found.	Algorithm Searching algorithm Binary Search Discard	
Week 13	Unicode	To compare the data storage of letters when stored in ASCII and Unicode. To explore the values that can not be stored in ASCII.	To understand the need for Unicode. To be able to state the number of bits used to store a Unicode value.	Character set Unicode ASCII Bits	