Computing Curriculum

Greswold Primary School

Subject Intent

At Greswold, we intend that our pupils develop key knowledge, skills and understanding within Computing lessons so they can use technology effectively and responsibly for a range of practical purposes. Our pupils will be taught Computing in a way that ensures progression of skills and follows a sequence to build on previous learning. Through their time at Greswold, our pupils will be introduced to the fundamentals of computer science so they understand the principals of how computers and networks work. They will be taught to solve problems, create algorithms and use different hardware and software to be creative. We intend that our pupils will act in a way consistent with our school values when using technology, being mindful of how their behaviour, words and actions can affect others. Our Computing curriculum explores the benefits of using technology and how it is integrated into modern life, however also prepare our pupils for hazards they may face. We aim to make Computing a subject that inspires curiosity and that some pupils will go on to have careers in the field. Children will be introduced to applications that have many practical applications (such as Word, Excel and PowerPoint) and refine their use for specific purposes. They will also explore how computers can support allow creativity, such as when creating art, music, film or animation.

Computing in the Early Years

Many children start at Greswold being familiar with a wide range of technology. They then develop skills and an understanding of the purpose of these technologies such as using Google as a search engine, modelled by the teacher. The children also have opportunities to use old mobile phones, keyboards and computers in their role play. They talk about the different technologies they use at home for example the microwave, washing machines and televisions. There are iPads available with age specific learning apps set up. They use the interactive whiteboards in the classrooms daily. When available, we use programmable toys to initiate their coding skills.

The Greswold Digital Learner

The Greswold...

Digital Learner



Understands the principals of how everyday technology works and its role in modern society, including how technology can be both helpful and harmful.

Is confident using different operating systems and applications, recognising similarities and differences between them.

Uses a range of software to achieve specific goals, understanding how technology makes certain tasks easier or faster to complete.

Uses technology to be creative (such as to create art, music or video).

As they move through Greswold, develops increasingly complex algorithms to solve problems.

Shows our school values while online, while also being alert to online risks and knowing how to seek help when problems arise.

Subject Outcomes

Year 1				
Online Safety	**How computers work**	**Coding skills**	**Practical uses of computers**	**Creative uses of computers**
	Mouse control website, Paint.	Bee-Bot app, J2e.com turtle.	j2e.com data handling	iPad photo app, Sketchpad.
• Discuss what the internet is and how it can be used. • Recognise that the internet may affect mood or emotions. • Recognise how internet use can affect and upset others. • Identify which information is appropriate to share and post online and which is not. • Explain what to do if something makes them uncomfortable online.	• Identify where computers are used around the home. • Log in and navigate around a computer. • Load applications. • Drag, drop, click and control a cursor using a mouse. • Understand how different types of clicks can be used.	• Explain what an algorithm is in relation to real-life situations. • Write clear algorithms. • Follow an algorithm. • Recognise cause and effect when using a basic robot (such as a Bee-Bot). • Create a series of at least 8 instructions. • Identify and correct mistakes in programming using trial and error.	• Understand that a computer can be used to store or represent data. • Present the same data in different ways. • Sort using a branching database.	• Use software tools to create art on the computer • Take clear photos using a device. • Edit photos by cropping, filtering and resizing. • Search for and import images from the Internet. • Organise images on a page, orientating where necessary. • Create shapes from points and lines, changing colours and widths.

Year 2				
Online Safety	**How computers work**	**Coding skills**	**Practical uses of computers**	**Creative uses of computers**
	Access to computers and tablets	Scratch Jr app	Microsoft Word	I Can Animate app, Paint
• Explain what is meant by online information. • Recognise what information is safe to be shared online. • Explain why we need passwords and what makes a strong password. • Understand that they need to ask permission before sharing content online and explain why. • Understand that they have the right to deny their permission to information about them being shared online. • Say who they can ask for help with online worries.	• Identify some uses for computers in places pupils have visited. • Name some computer peripherals and their functions. • Recognise the effects of different inputs. • Understand that technology follows instructions. • Recognise different forms of technology. • Explain some roles computers play in the world around them.	• Explain what the blocks on ScratchJr do and use them for a purpose. • Recognise a loop in coding and why it is useful. • Use a code to create an animation. • Use code to follow and create an algorithm. • Trigger code in different ways (e.g. 'On tap'). • Explain the role of the blocks in a program they have created	• Explain which are the home row keys and how to find them for typing. • Use the spacebar and backspace correctly. • Type and make simple alterations to text using buttons on a word processor. • Modify text in a document. • Use copy and paste to copy text from one document to another. • Save to My Documents and retrieve the file to continue editing.	**Digital art** • Develop mouse control to draw points and lines. • Use shapes to create images, changing their size and orientation. • Alter colours, line widths and fill colours. • Use Undo to go back from a mistake. **Stop-motion animation** • Plan a simple stop-motion film, deciding how a character will move through a scene. • Create movement, using onion-skinning to ensure characters move in the correct direction. • Delete frames to correct errors. • Describe how changing the FPS alters the smoothness of the animation.

Year 3

Online Safety	How computers work	Coding skills	Practical uses of computers	Creative uses of computers
Web browsers.	Physical computers to take apart.	Scratch desktop app or online.	Outlook web access.	iMovie.
• Differentiate between fact, opinion and belief online. • Explain how to deal with upsetting online content. • Recognise that digital devices communicate with each other to share personal information. • Explain what social media platforms are used for. • Recognise why social media platforms are age-restricted. • Recognise unkind behaviour online and know how to report it. • Recognise when an email may be fake and explain how they know.	**Computers** • Identify the main components of a computer including CPU, mass storage, RAM and ROM. • Identify input and output devices. • Make comparisons between different types of computers. **Networks** • Recognise that a network is two or more devices connected and its purpose. • Identify key components that make up the school's network including server and switches. • Describe some of the main functions of a server. • Explain the difference between wired and wireless connections.	• Explain what the main programming blocks do in Scratch. • Predict how a program will behave by examining the blocks used in order. • Explain what a loop is and include one in a program. • Suggest possible additions to an existing program by editing code. • Recognise where something on screen is controlled by code. • Use a systematic approach to find bugs. • Understand the definitions of decomposition and algorithm and how they are used to create accurate code.	**Email** • Log in and out of email. • Create and send a simple email, using an appropriate subject. • Edit an email stored in Drafts. • Find an email addresses in the Solgrid system. • Add an attachment to an email. • Manage emails by deleting or forwarding. • Use a suitable tone when creating an email for a specific audience. **Databases / Spreadsheets** • Explain what is meant by 'field,' 'record,' and 'data.' • Compare paper and computerised databases. • Enter data into a pre-prepared spreadsheet. • Create a simple graph.	• Create a storyboard as a plan for a purpose. • Consider camera angles when taking photos or videos. • Import videos and photos into video editing software. • Add text to a video. • Incorporate transitions between images. • Evaluate their own and others' work.

Year 4

Online Safety	How computers work	Coding skills	Practical uses of computers	Creative uses of computers
Web browsers.	Chrome desktop, Sway.	Scratch desktop app.	Microsoft Word, Microsoft Excel.	I Can Animate app, iMovie.
• Understand that different search engines may give different results. • Understand some of the methods used to persuade people to buy online. • Explain the difference between fact, opinion and belief and recognise these online. • Explain what a bot is and give examples of different bots. • Explain some positive and negative distractions of using technology and small strategies for reducing the time spent on technology. • Understand that a web site can be manipulated by a hacker and this may prove a danger.	• Recognise the role of HTML in a web page. • Identify some HTML tags and predict how many changes will affect a web page. • Edit HTML to make changes to a web page. • Create and edit a simple web page, exploring how making edits also changes the HTML. • Explore the advantages and disadvantages of collaborative editing. • Create internal and external hyperlinks on a web page.	• Create a script to achieve a goal, using a range of block types. • Change a sprite's properties. • Use decomposition to work out how code works; make use of this skill to identify an error in pre-prepared code. • Understand what a variable is and how to use the 'say' and 'ask' blocks. • Use a variable to store a value.	**Word** • Add, edit and format text in a document. • Insert and format images, wrapping text in different ways. • Use tables to organise information. • Format tables to present information clearly. • Understand the difference between Save and Save As. **Excel** • Use sort and filter to organise pre-prepared data. • Use cells to store data in rows and columns. • Copy and paste data from online	• Plan a stop-motion film, deciding on angles and framing. • Create smooth movement using stop-motion, using onion-skinning. • Make ongoing edits, removing frames with mistakes. • Understand why exporting is required to allow a project to be shared. • Add sound in synchronisation with video.

			sources into a workbook. • Understand the difference been Paste and Paste Special. • Use SUM function to find totals. • Create simple graphs and change their formatting.	

Year 5				
Online Safety	**How computers work**	**Coding skills**	**Practical uses of computers**	**Creative uses of computers**
Web sites related to online safety, Google AI experiments, Teachable Machine	Web sites related to binary, Microsoft Excel	Kodu, micro:bit app and Scratch	Microsoft PowerPoint, Web browser	Garage band, Microsoft PowerPoint
• Know what 'app permissions' are and how these settings protect private information. • Understand that there are positive and negative aspects of online communication. • Recognise differences between online and offline bullying and know how it can be reported. • Know the impact using technology can have on health and have strategies to use it in a healthy way. • Know what AI is and understand some of its implications for everyday life. • Know some key strategies for identifying misinformation online.	• Understand how binary can be used to store data in a computer. • Use binary to store numbers and text. • Understand that digital images can be stored in different ways (bitmaps or vector) and describe the differences. • Explain what a search engine is, suggest several search engines to use and explain how to use them to find websites and information. • Understand the role of web crawlers and recognise that search results are rated to decide rank.	• Iterate ideas by testing and making changes. • Create code which responds to inputs with specific outputs or actions. • Break a program into smaller steps for development. • Use loops to make code more efficient. • Predict confidently what code will do based on previous knowledge.	• Create a balanced layout using images and text. • Import images and text from Internet sources, understanding how attribute copyright. • Use hyperlinks within and between documents.	**Musical composition** • Understand how technology has influenced the creation of music. • Compare different ways of achieving the same outcome. • Use multiple tracks in a musical composition. • Make links between the different pieces of software (using loops in music composition and coding). **Digital art** • Create vector graphics using layers of shapes. • Use transformation effects to help create an image.

Year 6				
Online Safety	**How computers work**	**Coding skills**	**Practical uses of computers**	**Creative uses of computers**
Web browser	QR Scanner, Barcode creator	micro:bit app (including Python version), Trinket online	Microsoft Excel	iMovie
• Understand some issues that can occur online and know ways to get help. • Explain how sharing online can have both positive and negative impacts. • Be aware of issues relating to sharing content online and understand privacy settings. • Explain what a digital reputation is and what it can consist of. • Understand how to capture evidence of	• Be aware of how computers have changed since the 1940s in relation to key components. • Understand how encoding and decoding data is important for security. • Understand how barcodes and QR codes are used. • Understand some common ways data is transmitted (e.g. infrared, nearfield communication, Bluetooth).	• Apply knowledge of micro:bits to create code to achieve a specific goal. • Use variables to store inputs. • Use conditionals (if, then) in algorithms to respond to different inputs. • Debug code to find errors, using logical reasoning to identify why code is not behaving as expected. • Make comparisons between block-based coding and a programming language.	• Explain how a spreadsheet organises data into cells. • Edit data and discuss the effect on results. • Sort and filter data. • Format cells, including changing categories. • Use formulae using + - / * • Use functions including SUM, AVERAGE, MIN and MAX.	• Plan a project to present information for a specific audience. • Create video clips, audio clips and photographs; decide when media should be discarded and recorded again. • Import media onto a timeline. • Edit by changing the length or order of clips and the transitions to create the desired outcome.

online bullying. • Understand how online and device security can be enhanced, such as using two-factor authentication. • Describe strategies to identify scams.	• Understand how packets are used to transmit data over a network. • Identify how connected devices have different data uses.	• Write commands in Python, identifying how variables can be changed.	• Present data in different ways and decide which is most effective.	• Evaluate a finished video project, discussing how the project was created and edited.

Subject Long-Term Plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Online safety Offline	An introduction to data and databases iPads	Computer systems, mouse skills and digital art 1 Computer Room	Algorithms and Bee Bots iPads	Programming 1: Algorithms Unplugged Computer Room	Digital photography iPads
Year 2	Online safety Offline	Using Technology and Keyboard Skills Computer Room	Programming 1: Algorithms and debugging Computer Room	Digital art 2 Computer Room	Programming2: MakeCode iPads	Stop-motion animation 1 iPads
Year 3	Online safety Offline	Computers and networks iPads	Scratch programming 1 Computer Room	Email and how it works Computer Room	Databases: Sorting and filtering Computer Room	Video editing iPads
Year 4	Online safety and computer gaming Offline	Combining information using Office Computer Room	Data handling: Investigating weather Computer Room	Programme 1: Further Coding with Scratch iPads	HTML and website design Computer Room	Stop-motion animation 2 iPads
Year 5	Online safety and artificial intelligence Offline / iPads	Mars exploration: Coding and storing images Computer Room	Programming music iPads	Effective searching iPads	Binary and an introduction to micro:bits iPads	Using IT creatively: Vector drawing and presentation design Computer Room
Year 6	Online safety (including NSPCC Prevent) Offline / iPads	Creating a movie iPads	Using micro:bits iPads	Bletchley Park, code breaking and transmitting data today iPads	Python basics Computer Room	Excel skills and 'big data' Computer Room

Subject Progression: Online Safety

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	• use technology safely and respectfully, keeping personal information private; identify • where to go for help and support when they have concerns about content or contact on • the internet or other online technologies.		• Use technology safely, respectfully and responsibly • Recognise acceptable/unacceptable behaviour • Identify a range of ways to report concerns about content and contact.			
Online Safety Progression	• Discuss what the internet is and how it can be used. • Recognise that the internet may affect mood or emotions. • Recognise how internet use can affect and upset others. • Identify which information is appropriate to share and post online and which is not. • Explain what to do if something makes them uncomfortable online.	• Explain what is meant by online information. • Recognise what information is safe to be shared online. • Explain why we need passwords and what makes a strong password. • Understand that they need to ask permission before sharing content online and explain why. • Understand that they have the right to deny their permission to information about them being shared online. • Say who they can ask for help with online worries.	• Differentiate between fact, opinion and belief online. • Explain how to deal with upsetting online content. • Recognise that digital devices communicate with each other to share personal information. • Explain what social media platforms are used for. • Recognise why social media platforms are age-restricted. • Recognise unkind behaviour online and know how to report it. • Recognise when an email may be fake and explain how they know.	• Understand that different search engines may give different results. • Understand some of the methods used to persuade people to buy online. • Explain the difference between fact, opinion and belief and recognise these online. • Explain what a bot is and give examples of different bots. • Explain some positive and negative distractions of using technology and small strategies for reducing the time spent on technology. • Understand that a web site can be manipulated by a hacker and this may prove a danger.	• Know what 'app permissions' are and how these settings protect private information. • Understand that there are positive and negative aspects of online communication. • Recognise differences between online and offline bullying and know how it can be reported. • Know the impact using technology can have on health and have strategies to use it in a healthy way. • Know what AI is and understand some of its implications for everyday life. • Know some key strategies for identifying misinformation online.	• Understand some issues that can occur online and know ways to get help. • Explain how sharing online can have both positive and negative impacts. • Be aware of issues relating to sharing content online and understand privacy settings. • Explain what a digital reputation is and what it can consist of. • Understand how to capture evidence of online bullying. • Understand how online and device security can be enhanced, such as using two-factor authentication. • Describe strategies to identify scams.

Subject Progression: How Computers Work

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	• recognise common uses of information technology beyond school		• 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			
How Computers Work Progression	• Identify where computers are used around the home. • Log in and navigate around a computer. • Load applications. • Drag, drop, click and control a cursor using a mouse. • Understand how different types of clicks can be used.	• Identify some uses for computers in places pupils have visited. • Name some computer peripherals and their functions. • Recognise the effects of different inputs. • Understand that technology follows instructions. • Recognise different forms of technology. • Explain some roles computers play in the world around them.	• Identify the main components of a computer including CPU, mass storage, RAM and ROM. • Identify input and output devices. • Make comparisons between different types of computers. • Recognise that a network is two or more devices connected and its purpose. • Identify key components that make up the school's network including server and switches. • Describe some of the main functions of a server. • Explain the difference between wired and wireless connections.	• Recognise the role of HTML in a web page. • Identify some HTML tags and predict how many changes will affect a web page. • Edit HTML to make changes to a web page. • Create and edit a simple web page, exploring how making edits also changes the HTML. • Explore the advantages and disadvantages of collaborative editing. • Create internal and external hyperlinks on a web page.	• Understand how binary can be used to store data in a computer. • Use binary to store numbers and text. • Understand that digital images can be stored in different ways (bitmaps or vector) and describe the differences. • Explain what a search engine is, suggest several search engines to use and explain how to use them to find websites and information. • Understand the role of web crawlers and recognise that search results are rated to decide rank.	• Be aware of how computers have changed since the 1940s in relation to key components. • Understand how encoding and decoding data is important for security. • Understand how barcodes and QR codes are used. • Understand some common ways data is transmitted (e.g. infrared, nearfield communication, Bluetooth). • Understand how packets are used to transmit data over a network. • Identify how connected devices have different data uses.

Subject Progression: Coding Skills

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs		• 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			
Coding Skills Progression	• Explain what an algorithm is in relation to real-life situations. • Write clear algorithms. • Follow an algorithm. • Recognise cause and effect when using a basic robot (such as a Bee-Bot). • Create a series of at least 8 instructions. • Identify and correct mistakes in programming using trial and error.	• Explain what the blocks on ScratchJr do and use them for a purpose. • Recognise a loop in coding and why it is useful. • Use a code to create an animation. • Use code to follow and create an algorithm. • Trigger code in different ways (e.g. 'On tap'). • Explain the role of the blocks in a program they have created.	• Explain what the main programming blocks do in Scratch. • Predict how a program will behave by examining the blocks used in order. • Explain what a loop is and include one in a program. • Suggest possible additions to an existing program by editing code. • Recognise where something on screen is controlled by code. • Use a systematic approach to find bugs. • Understand the definitions of decomposition and algorithm and how they are used to create accurate code.	• Create a script to achieve a goal, using a range of block types. • Change a sprite's properties. • Use decomposition to work out how code works; make use of this skill to identify an error in pre-prepared code. • Understand what a variable is and how to use the 'say' and 'ask' blocks. • Use a variable to store a value.	• Iterate ideas by testing and making changes. • Create code which responds to inputs with specific outputs or actions. • Break a program into smaller steps for development. • Use loops to make code more efficient. • Predict confidently what code will do based on previous knowledge.	• Apply knowledge of micro:bits to create code to achieve a specific goal. • Use variables to store inputs. • Use conditionals (if, then) in algorithms to respond to different inputs. • Debug code to find errors, using logical reasoning to identify why code is not behaving as expected. • Make comparisons between block-based coding and a programming language. • Write commands in Python, identifying how variables can be changed.

Subject Progression: Practical uses of computers

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	• use technology purposefully to create, organise, store, manipulate and retrieve 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			
Practical uses of computers Progression	• Understand that a computer can be used to store or represent data. • Present the same data in different ways. • Sort using a branching database.	• Explain which are the home row keys and how to find them for typing. • Use the spacebar and backspace correctly. • Type and make simple alterations to text using buttons on a word processor. • Modify text in a document. • Use copy and paste to copy text from one document to another. • Save to My Documents and retrieve the file to continue editing.	• Log in and out of email. • Create and send a simple email, using an appropriate subject. • Edit an email stored in Drafts. • Find an email addresses in the Solgrid system. • Add an attachment to an email. • Manage emails by deleting or forwarding. • Use a suitable tone when creating an email for a specific audience. • Explain what is meant by 'field,' 'record,' and 'data.' • Compare paper and computerised databases. • Enter data into a pre-prepared spreadsheet. • Create a simple graph.	• Add, edit and format text in a document. • Insert and format images, wrapping text in different ways. • Use tables to organise information. • Format tables to present information clearly. • Understand the difference between Save and Save As. • Use sort and filter to organise pre-prepared data. • Use cells to store data in rows and columns. • Copy and paste data from online sources into a workbook. • Understand the difference been Paste and Paste Special. • Use SUM function to find totals. • Create simple graphs and change their formatting.	• Create a balanced layout using images and text. • Import images and text from Internet sources, understanding how attribute copyright. • Use hyperlinks within and between documents.	• Explain how a spreadsheet organises data into cells. • Edit data and discuss the effect on results. • Sort and filter data. • Format cells, including changing categories. • Use formulae using + - / * • Use functions including SUM, AVERAGE, MIN and MAX. • Present data in different ways and decide which is most effective.

Subject Progression: Creative uses of computers

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
National Curriculum	• use technology purposefully to create, organise, store, manipulate and retrieve 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			
Creative uses of computers Progression	• Use software tools to create art on the computer • Take clear photos using a device. • Edit photos by cropping, filtering and resizing. • Search for and import images from the Internet. • Organise images on a page, orientating where necessary. • Create shapes from points and lines, changing colours and widths.	• Develop mouse control to draw points and lines. • Use shapes to create images, changing their size and orientation. • Alter colours, line widths and fill colours. • Use Undo to go back from a mistake. • Plan a simple stop-motion film, deciding how a character will move through a scene. • Create movement, using onion-skinning to ensure characters move in the correct direction. • Delete frames to correct errors. • Describe how changing the FPS alters the smoothness of the animation.	• Create a storyboard as a plan for a purpose. • Consider camera angles when taking photos or videos. • Import videos and photos into video editing software. • Add text to a video. • Incorporate transitions between images. • Evaluate their own and others' work.	• Plan a stop-motion film, deciding on angles and framing. • Create smooth movement using stop-motion, using onion-skinning. • Make ongoing edits, removing frames with mistakes. • Understand why exporting is required to allow a project to be shared. • Add sound in synchronisation with video.	• Understand how technology has influenced the creation of music. • Compare different ways of achieving the same outcome. • Use multiple tracks in a musical composition. • Make links between the different pieces of software (using loops in music composition and coding). • Create vector graphics using layers of shapes. • Use transformation effects to help create an image.	• Plan a project to present information for a specific audience. • Create video clips, audio clips and photographs; decide when media should be discarded and recorded again. • Import media onto a timeline. • Edit by changing the length or order of clips and the transitions to create the desired outcome. • Evaluate a finished video project, discussing how the project was created and edited.

Vocabulary: Key Stage 1

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Online safety 🔵	Computer systems, mouse skills and Digital art 1 🔴🟢	An introduction to data and databases 🟢	Algorithms and Bee Bots 🟠	Digital photography 🟡	Digital art 1 🟡
Year 2	**Online safety** 🔵 Consent Denying permission Fake Giving permission Offline Online Password Permission Personal information Pop-up Pressure Private information Reliable Sharing online Source Trusted adult	**Word processing skills** 🟢 Backspace Bold Copy Cursors Cut Delete Highlight Image Import Italic Keyboard Layout Paste Space bar Text Touch typing Underline Undo Word processing	**Algorithms and Debugging** 🔴 Battery Buttons Computer Desktop Electricity Input Keyboard Laptop Mouse Output Screen (monitor) Tablet Technology Webcam Wire command error instructions order	**Digital art 2** 🟡 File Fill colour Fill effect Line width Load Paint Pixel Save Shape	**Programming: MakeCode** 🟠 Algorithm Block coding Bug Debug Evaluate Program Sequence Sprite Stage	**Stop-motion animation 1** 🟡 Animation Character Edit Frames Onion skinning Stop motion Storyboard

Vocabulary: Lower Key Stage 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3	**Online safety** 🔵 Accurate/ Age restrictions Content Digital device/ Fake news Hoax Internet Internet of things Opinion/ Online emotions Organisation/ Permission/ Privacy settings Reliable/ Search/ Search engine/ Smart devices Social media platforms	**Computers and networks** 🔴 Central Processing Unit Device/ File/ Graphics Processing Unit Input Internet Network/ Random Access Memory Read Only Memory Router Server Switch/ The cloud/ WiFi/ Wired/ Wireless Wireless access point	**Scratch programming 1** 🟠 Algorithm/ Animation/ Application/ Code/ Code block/ Debug Decompose/ Game/ Interface/ Loop/ Predict Program/ Repetition code/ Review/ Scratch/ Sprite/	**Email and how it works** 🔵🟢 Attachment Bcc (Blind carbon copy) Cc (Carbon copy) Cyberbullying Download/ Email account Email address Emoji/ Hacker Inbox Log out Reply Scammer Send/ Sign in/ Spam email/ Subject bar Virus	**Databases: Sorting and filtering** 🟢 Categorise/ Category Chart Data/ Database/ Excel/ Fields Filter Graph/ Information/ Interpret PDF Questionnaire Record/ Representation/ Sort Spreadsheet	**Video editing** 🟡 Camera angle/ Clip/ Cross dissolve/ Edit Fade to black/ Fade to white/ Graphics Import Key events Recording Slide/ Sound effects Storyboard/ Time code/ Transition/ Video Voiceover Wipe/
Year 4	**Online safety and computer gaming** 🔵 Accuracy Ad / advertisement Bot Distraction/ Hashtag (#) In-app purchases Influencer Opinion/ PEGI Program/ Rating Recommendation/ Reliable/ Risk/ Screen time/ Sponsored/ Trustworthy	**Combining information using Office** 🟢 Align/ Cells Clipboard/ Copy (Ctrl + C) File/ Font Format Justify Layout Object Office Ribbon/ Paste (Ctrl + P) Select Styles Table/ Taskbar Undo (Ctrl + Z) Word processor	**Data handling: Investigating weather** 🟢 Accurate/ Cell/ Cell reference/ Column/ Data/ Excel/ Filter Formatting Graph/ Row Sort Spreadsheet	**Further coding with Scratch** 🟠 Code block/ Conditional statement Coordinates Decompose/ Feature Information/ Negative number Orientation/ Position/ Program/ Project Script Sprite/ Stage/ Variable/	**HTML and website design** 🔴🟡 Code/ Content Copyright Cascading Style Sheet (CSS) Elements Embed/ Hacker Heading HTML HTML tags Import Internet browser Start tag Text URL Web page/	**Stop-motion animation 2** 🟡 Animation/ Animator Background/ Character Edit Frames Model/ Onion skinning Stop motion/ Storyboard/

Vocabulary: Upper Key Stage 2

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5	**Online safety and artificial intelligence** 🔵 application / app artificial intelligence / AI app permissions bullying emojis in-app purchases meme mental health model online communication password personal information real world / IRL strong password training trusted adult well-being	**Mars exploration: Coding and storing images** 🟠 Bitmap Cell Compression Conditional (when do) Environment Input JPEG Objects / object tool Output PNG Red Green Blue (RGB)	**Programming music** 🟡🟠 DAW code debug decompose loop music output pitch repeat rhythm sample sequence tempo track volume	**Effective searching** 🔴🟢🔵 algorithm copyright fake news inaccurate index keywords online page rank search engine web crawler website www	**Binary and an introduction to micro:bits** 🔴🟠 Algorithm App Blocks Bluetooth Code block Create Debug Decompose Device Download Input Load Loop micro:bit Outputs Pairing Predict Program	**Vector drawing and presentation design** 🟢🟡 Closed shape Curve Fill Hyperlink Open shape Point Layers Send to back / front Slide Snap Vector
Year 6	**Online safety (including NSPCC Prevent)** 🔵 anonymity antivirus biometrics block consent digital footprint digital personality hacking malware online bullying online reputation personal information phishing privacy settings reliable source report scammers screen grab / screenshot secure software updates	**Creating a movie** 🟡 Application Camera angle Clip Cross fade Desktop Digital device Directional wipe Edit Graphics Import Laptop Music Photo Plan Recording Sound effects Storyboard Time code Transition Video Voiceover	**Using micro:bits** 🟠 Algorithm App Blocks Bluetooth Code block Connection Create Debug Decompose Device Download Input Load Loop micro:bit Outputs Pairing Predict Program	**Python basics** 🟠 Algorithm Code Command Design Import Indentation Input Instructions Loop Output Patterns Random Remix Repeat Shape	**Bletchley Park, code breaking and transmitting data today** 🔴 acrostic code audio brute force hacking Caesar cipher chip and PIN system cipher decrypt discovery encrypt invention Nth letter cipher password pigpen cipher RFID scrambled script secret secure trial and error	**'Big data' and Excel skills** 🟢 algorithm barcode boolean cell chip column contactless data formula infrared QR code radio waves row signal sort spreadsheet transmission wireless