Computing: Curriculum Progression Map

Year group	National Curriculum, key skills and knowledge	Key vocabulary
• Foundation	**Technology at home and at school:** • I can recognise and talk about technology around the classroom and at home. • I am familiar with using technology, including iPads and desktop computers. • I know that technology needs power to work. • I know that there are rules when using technology to keep me safe. (e.g. only used with an adult, what to do if you see something upsetting etc.) **Using technology:** • I can navigate around a tablet such as an iPad. • I know the basic components of a desktop computer, such as mouse, keyboard, monitor etc. • I know that photographs can be taken with a range of devices and I have experience of taking photos. **Simple Instructions:** • I can follow simple instructions. • I know that my action (input) can have an impact on technology (output) • I have experience of using reaction technology, such as Easi-cars.	Technology, device, i-pad, tablet, computer, desktop, mouse, keyboard, monitor, photo, instructions, input, output, charge, battery, electricity, power
Year 1	National Curriculum Learning outcome: *Use technology purposefully to create, organise, store, manipulate and retrieve digital content.* • I can safely switch computers, laptops and other devices on and off, and log onto a desktop computer using a username and password. • I know the basic components of a desktop computer, such as mouse, keyboard, monitor etc. and can explain what they are used for. • I can use a keyboard to type, including using basic keys such as enter, space bar, backspace, shift. • I understand the different ways in which photographs are used and the different places where they can be found, both at home and at school. • I understand that there are lots of different ways of taking photographs. • I can explore taking photos of people and places, and evaluate what makes a successful photograph. • I can create digital content using a range of apps. • I know and can use the playback symbols (play, pause, stop, record). • I can record sound. • I can save digital content with support, including exporting to video. • I can retrieve content that I have made. • I can evaluate content that I have made and reflect on what needs changing.	Camera, digital, film, photograph, photographer, frame, focus, zoom, angle Keyboard, desktop computer, pc, type/typing, shift, upper/lower case, enter, space bar, keys, mouse, cursor, touchpad, backspace, delete, format, font, sizing. Word processing, document, username, password, save, retrieve Animation, stories, characters, stage, speech, narration, story board tool, app, picture, graphics, image, undo, redo

	National Curriculum Learning outcomes: *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.* • I am beginning to understand that algorithms are a set of instructions and that programs work by following these instructions. • I know that an output is the result of an input, *e.g. the beebot moved because __ button was pressed.* • I know that algorithms can be used to implement programs on digital devices. • I am beginning to understand that algorithms need to be precise and unambiguous and in sequential order. • I am beginning to create simple programs using an algorithm. • I am beginning to understand what debugging is. • I am beginning to debug a simple problem. • I am beginning to use logical reasoning to predict the behaviour of simple programs.	algorithm, programming, debug, predict, precise, unambiguous, programs, output, input, device, sequence, commands
	National Curriculum Learning outcomes: *Recognise common uses of information technology beyond school.* • I can identify uses of technology at home, in school and in the local area (e.g. library).	
	National Curriculum Learning outcomes: *I can use technology safely and respectfully. I can keep personal information private (logging on to computers). I can identify where to go for help and support when I have concerns about content or contact on the internet or other online technologies.* • I know and understand the SMART rules (Safe, Meet, Accepting, Reliable, Tell). • I know what to do if I see anything on a device that makes me feel sad or uncomfortable. • I know that usernames and passwords are important for keeping information safe and secure. • I use technology respectfully.	SMART rules, safe, tell, trusted adult, uncomfortable
Year 2	National Curriculum Learning outcome: *Use technology purposefully to create, organise, store, manipulate and retrieve digital content.* • I understand the different ways in which videos are used and how they can be useful in my life, both in and out of school. • I understand that there are lots of different ways of taking videos (camcorder, tablet, phone etc.) • I can explore taking videos for different purposes, and evaluate what makes a successful video. • I can take a short video, applying my knowledge of what makes a video successful (e.g. in focus, steady, slow movements etc.) • I can use different filming techniques and camera angles (e.g. zoom, panning, wide shot etc.). • I can evaluate the content that I have created and have considered what makes them successful. • I know how to use punctuation (space, full stop, exclamation mark, question mark) using a keyboard. • I know how to format text that I have written (e.g. change font, sizing, colour etc.) • I can format text according to its purpose. • I am beginning to type quickly and effectively. • I can create a range of digital content using appropriate programs. • I can save and retrieve digital content that I have created. • I can use a paint package to create a picture to communicate my ideas. • I can explore and evaluate the use of technology.	Camera, digital, film, photograph, photographer, frame, focus, zoom, angle Keyboard, desktop computer, pc, type/typing, shift, upper/lower case, enter, space bar, keys, mouse, cursor, touchpad, backspace, delete, format, font, sizing. Word processing, document, username, password, save, retrieve Animation, stories, characters, stage, speech, narration, story board tool, app, picture, graphics, image, undo, redo

	National Curriculum Learning outcomes: *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.* • I know what an algorithm is and can use algorithms with new/unfamiliar programs. • I understand that algorithms need to be precise and unambiguous. • I understand what debugging is. • I can debug a problem when something has gone wrong, by decomposing algorithms into small chunks to identify errors. • I can use logical reasoning to predict the behaviour of simple programs.	algorithm, programming, debugging, precise, logic, decompose, logical reasoning, trial and error, sequence, sequential
	National Curriculum Learning outcomes: *Recognise common uses of information technology beyond school.* • I know what 'technology' means and can identify various technology in the classroom, at home, and in the local area. • I understand how technology affects my life and the ways in which it makes my life easier. • I can sort technologies by their uses • I understand the ways in which technology is used for good (making things easier, for education, in hospitals etc.).	Technology, Artificial Intelligence, computers, tablets, iPads, televisions, checkouts,
	National Curriculum Learning outcomes: *I can use technology safely and respectfully. I can keep personal information private (logging on to computers). I can identify where to go for help and support when I have concerns about content or contact on the internet or other online technologies.* • I know and understand the SMART rules (Safe, Meet, Accepting, Reliable, Tell). • I know what to do if I see anything on a device that makes me feel sad or uncomfortable. • I know that usernames and passwords are important for keeping information safe and secure. • I use technology respectfully. • I am aware of some ways in which technology is not used for good, and what to do if I see people not using technology for good (unfriendly messages, pop-ups etc.)	SMART rules, safe, tell, trusted adult, uncomfortable
Year 3	National Curriculum Learning outcomes: 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 • I am beginning to create simple animations, using algorithms (inputs) to make my sprite move (output). • I am beginning to design and write a program that accomplishes a given goal. • I can decompose a task into smaller chunks in order to write an algorithm. • I know how to create and alter a sprite and background. • I am beginning to use simple repetition loops so that an action is repeated. • I am beginning to improve my algorithms using a trial and error approach. • I beginning to debug complex problems by decomposing them down into smaller parts. •	Navigate, sprite, foreground, background, commands, position, algorithms, program, input, output, trial and error, debug, repetition

	National Curriculum Learning outcomes: 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 • I know that technology enables access to a wider range of information and tools to help find specific information quickly. • I know that a website has a unique address, a URL. • I can identify some features of web pages e.g. graphics, hyperlinks, text. • I can navigate a web page to locate specific information. • I can begin to understand how search engines work and know that there are different search engines; some to search within sites, and some to search the wider Internet. • I can use a range of child friendly search engines to locate different media, e.g., text, images, sounds or videos, and understand the importance of safe search engines. • I am beginning to understand what networks are and how they can be used. • I know that computers in school are all connected in a network. • I am beginning to explain the purpose of certain devices on a computer network.	Internet, world wide web, browser, search engine, search bar, website, webpage, hyperlink, home page, information, media, text, images, sound, videos, specific Networks, device, electronic, community, communicate, connect, internet, desktop PC, laptops, iPad, printer etc.
	National Curriculum Learning outcomes: 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 • I understand that animations are produced by viewing a sequence of frames in order and that the brain perceives this as a moving image. • I am beginning to understand that animations are smoother if they have more frames with smaller movements. • I can create more complex animations. • I can create and animate my own stick figure types. • I can tell a story through an animation. • I am beginning to evaluate and improve my work, considering its purpose and audience. • I can type quickly and effectively. • I know how to insert different shapes and lines into a document. • I can manipulate different objects (shapes, lines etc.) within a word document. • I can insert and use text boxes in a document. • I can insert pictures into a document and manipulate them. • I can save my work in an appropriate place. • I can navigate folders to retrieve my saved work. • I can explore branching tree charts. • I can sort some objects using a branching tree chart. • I can use simple graphing software to create a branching tree. • I can create an advanced branching tree by adding more questions and answers. •	Stop motion, animation, smooth, onion skin, stills, ghost, frame, zoom, angle, image, audience, purpose, Keyboard, desktop computer, pc, type/typing, shift, enter, space bar, keys, mouse, touchpad, backspace, text, format, font, sizing. Word processing, document. Data, database, yes/no answers, questions, choices, options, branching tree.

	National Curriculum Learning outcomes: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • I can create my own password to log onto the desktop computers. • I know that it is important to keep my password safe and private. • Know what is meant by the term identity, how you can represent yourself online and ways in which you can change your identity e.g. using an avatar • Know and understand the term digital footprint, being able to give positive and negative examples • Know the need to be careful before sharing things online, and the consequences of this • Know and understand the term privacy settings, and how these can be applied • Know simple strategies for creating and keeping passwords private, and why they are important • Know that websites/games implement age restrictions to keep users safe • Know different examples of technology specific forms of communication e.g. emojis, text speech • Know and explain the risks of communicating online with people you don't know well • Know the difference between knowing someone online, and knowing someone in real life • Know what bullying is, and explain how this may happen online, explaining strategies to stop this from happening	Online, social environments, Online technologies, Reliable, Accurate, Opinion, Belief, Fact, Password, Passcode
Year 4	National Curriculum Learning outcomes: 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 • I can create simple animations, using algorithms (inputs) to make my sprite move (output). • I can design and write a program that accomplishes a given goal. • I know how to create and alter a sprite and background. • I can use simple repetition loops so that an action is repeated. • I can explain why something has gone wrong. • I can improve my algorithms using a trial and error approach. • I can debug complex problems by decomposing them down into smaller parts.	Coding, programming, background, conditional statements, if, then, when, input, output, repeat, when , if ,background, sprite, debug
	National Curriculum Learning outcomes: 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 • I understand how search engines work and know that there are different search engines; some to search within sites, and some to search the wider Internet. • I can use a range of child friendly search engines to locate different media, e.g., text, images, sounds or videos, and understand the importance of safe search engines. • I can develop key questions and key words to search for specific information to answer a problem, e.g., a question such as 'Where could we go on holiday?' would become a search for 'holiday destinations'. • I can use more advanced searching techniques, such as the tools, to refine my search • I can choose the most appropriate search engine for a task, e.g: image search. • I am beginning to question where web content might originate from and understand that this gives clues to its authenticity and reliability, e.g., by looking at web address, author, contact us sections, linked pages. • I understand what networks are and how they can be used. • I know that computers in school are all connected in a network. • I can explain the purpose of certain devices on a computer network.	Internet, world wide web, browser, search engine, search bar, website, webpage, hyperlink, home page, information, media, text, images, sound, videos, specific Networks, device, electronic, community, communicate, connect, internet, desktop PC, laptops, iPad, printer etc.

	<u>National Curriculum Learning outcomes:</u> 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 • I understand that animations are produced by viewing a sequence of frames in order and that the brain perceives this as a moving image. • I can compare animations and identify what makes an animation successful. • I understand that animations are smoother if they have more frames with smaller movements. • I can follow a script/storyboard to create a stop motion animation that tells a story. • I can review the effectiveness of an animation, evaluating and improving my work, considering its purpose and audience. • I know that technology can be used to capture data. • I understand that data loggers can be used to sense external and physical changes and collect data. • I can use a data logger to capture information from a light, sound or temperature sensor. • I can take a series of snap-shot readings and compare them. • I can give some examples of real-life situations where sensors are used. • I can plot my data on a graph. • I can analyse data continuously over time, including sound, temperature and light. • I can create differently formatted slides using a presentation application, e.g. Slides or Power Point. • I know how to make a slide visually appealing (background colour, fonts, images etc.) • I can create slides which each have their own theme/subheading. • I can animate the objects on my slides (entrance, emphasis, exit). • I can create transitions between my slides. • I can evaluate what works well and what could be improved.	Stop motion, animation, smooth, onion skin, ghost, frame, still, take, zoom, angle, image, audience, purpose, props Keyboard, desktop computer, pc, type/typing, shift, enter, space bar, keys, mouse, touchpad, backspace, text, format, font, sizing. Word processing, document, password, animation, slide, transitions Technology, data, data loggers, external, physical, changes, capture information, light, sound, temperature, sensor
	<u>National Curriculum Learning outcomes:</u> Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • I can create my own password to log onto the desktop computers. • Know what a strong password is, and explain strategies for keeping personal information private in a range of contexts • Know how online identities can be different to real life identities • Know the importance of reflecting on their online behaviour, and the impact this can have on their digital footprint • Know and understand that the same friendship values apply online as to face to face • Know strategies for safe and fun experiences in a range of online social environments, giving examples of how to be respectful to others online. • Know that some information on the internet is protected by copyright, consider who has the right to use it, with examples • Know that not all sources of information on the internet are reliable/ accurate, knowing the difference between opinion, belief and fact	Online social environments Online technologies Reliable Accurate Copyright Opinion Belief Fact Password Passcode
Year 5	<u>National Curriculum Learning outcomes:</u> 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 • I can navigate a program to create simple animations, using algorithms (inputs) to make my sprite move (output). • I can use x and y coordinates to position my sprite and make it move to specific places on the screen. • I can use conditional statements (if, then) within an animation. • I can use repeat loops so that an action repeats. • I can accurately identify how programming has gone wrong to debug the problem. • I can create a simple game incorporating the skills that I have learnt.	Scratch, programming, background, conditional statements, if, then, when, input, output, repeat, when , if ,background, sprite, debug

	<u>National Curriculum Learning outcomes:</u> 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 • I can use appropriate strategies for finding, critically evaluating, validating and verifying information. • I can question where web content might originate from and understand that this gives clues to its authenticity and reliability, e.g., by looking at web address, author, contact us sections, linked pages. • I know about different ways to communicate using the internet. • I know what email is and what sort of data can be shared using it. • I can share and exchange my ideas using e-mail and electronic communication inside the school environment. • I understand who I can trust to share my personal information with. • I know about many of the benefits of the internet. • I can recognise acceptable/unacceptable behaviour online. • I can identify a range of ways to report concerns about content and contact. • I can begin to recognise that anyone can author on the internet and sometimes web content is inaccurate or even offensive. • I know that provision is made in schools to filter internet content, recognising this is possibly not the case on computers used at home. • I know about my digital footprint. •	Internet, world wide web, browser, search engine, search bar, website, webpage, hyperlink, home page, information, media, text, images, sound, videos, specific Internet, world wide web, browser, social media, plagiarism, positive, negative, balanced, impact
	<u>National Curriculum Learning outcomes:</u> 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 • I can use video editing software to put clips together to make a movie. • I can select the most effective clips and snip/cut unwanted scenes/clips. • I can add titles and credits to a video. • I can use transitions between video clips, considering what will be most effective for the audience. • I can evaluate and improve my work, considering its purpose and audience. • I know what an eBook is and can evaluate what makes an effective eBook. • I can create a simple eBook. • I can add text, images and a sound button to my eBook. • I can evaluate my own eBook and give others feedback. • I understand the importance of data-collection for various uses. • I understand the need for data protection and some of the rights of individuals over stored data and how it affects use and storage of data in the real world. • I can compare different graphs and evaluate their usefulness for different types of data & different purposes. • I recognise the consequences of inaccurate data in the real world: (e.g. doctors, banks, police etc.). • I am beginning to design a form for a survey / questionnaire to collect the required data. • I am beginning to collect data & enter it in to a database under appropriate field headings. • I am beginning to use the database to answer questions by searching & sorting a single field. (e.g. how many children have blonde hair?) • I can raise further questions relevant to the data I have collected.	video, smooth, frame, zoom, angle, image, edit, snip, slice, cut, transitions, audience, purpose, perspective eBooks, interactive, story, transitions, pages, text, pen, images, photos, sound button, evaluate, reflect. Technology, data, calculate, cell, column, formula(e), model, row, spreadsheet, sum, table

	National Curriculum Learning outcomes: Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • I can create my own password to log onto the desktop computers. • Know what a strong password is, and explain strategies for keeping personal information private in a range of contexts • Know how online identities can be different to real life identities • Know the importance of reflecting on their online behaviour, and the impact this can have on their digital footprint • Know and understand that the same friendship values apply online as to face to face • Know strategies for safe and fun experiences in a range of online social environments, giving examples of how to be respectful to others online. • Know that some information on the internet is protected by copyright, consider who has the right to use it, with examples • Know that not all sources of information on the internet are reliable/ accurate, knowing the difference between opinion, belief and fact	Modified Scenario Risk/danger Online communities Traced Positive contributions Platforms Abusive content/users Mis-information Dis-information Sceptical Hoax Blog Collaboratively
Year 6	National Curriculum Learning outcomes: 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 • I can navigate programming to create simple animations, using algorithms (inputs) to make my sprite move (output). • I can use conditional statements (if, then) within an animation. • I can make one sprite 'chase' another sprite. • I can create variables (e.g. *lives* or *points*) and understand how to make these change. • I can create a game including variables. • I can edit and debug my game so that it can be played by others.	Scratch, programming, background, conditional statements, if, then, when, input, output, repeat, when, if, background, sprite, debug
	National Curriculum Learning outcomes: 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 • I can I understand that messages can quickly be sent electronically over distances and that people can reply to them. • I know what a 'blog' is. • I can make purposeful contributions and comments to/on a blog. • I can respond to people on a blog safely, respectfully and responsibly. • I can recognise acceptable/unacceptable behaviour. • I know about many of the benefits of the internet. • I can begin understand the concept of copyright, e.g., what images, videos or sounds are legal and safe to use in their own work. • I am aware that copying text directly from websites or non-digital resources is equivalent to stealing other people's work (plagiarism). • I understand the need to ignore unwanted advertising or pop-ups as they can inadvertently introduce viruses or spyware onto a computer system. • I can discuss how the internet has positively and negatively affected society.	Internet, world wide web, browser, search engine, search bar, website, webpage, hyperlink, home page, information, media, text, images, sound, videos, specific, safe, blogging, reliable, fact, fiction, opinions Internet, world wide web, browser, social media, plagiarism, viruses, malware, spyware, pop-ups, positive, negative, balanced, impact

	<u>National Curriculum Learning outcomes:</u> 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 • I can record a short video and edit it using video editing software, cutting unwanted scenes, adding transitions and credits/titles. • I can experiment with a range of sound effects and music, considering the effect they have on the audience, using video editing software. • I can thoughtfully and purposefully select sound effects and music for a video, creating mood/atmosphere, using video editing software. • I know how to record a voice-over using video editing software. • I can speak clearly into a microphone or an iPad, using my voice purposefully to have an effect on the audience. • I can use a range of sound effects, music and voice overs to create mood/atmosphere with a video. • I can evaluate and improve my work, considering its purpose and audience. • I can create hyperlinks between slides using text or objects. • I can plan an informative Power Point based on a theme (e.g. The Tudors) • I can create a title page, a contents page and subsequent information slides. • I can create hyperlinks between my contents page and my subsequent information slides. • I can debug a problem systematically if my hyperlink does not work. • I have considered the aesthetics of my Power Point presentation so that it is visually effective. • I can evaluate my Power Point eBook. • I understand that spreadsheets can automate functions, making it quicker to perform calculations • I can begin to understand how those formula are constructed. • I can design a survey/questionnaire to collect data. • I can collect data and enter it in to a database under appropriate field headings. • I can search data on more than one criterion understanding the difference between AND & OR searches. (e.g. "How many children have blonde hair AND blue eyes?" and "How many children have blonde OR blues eyes?") • I can select relevant data and appropriate graphs to present to others perhaps as part of a multimedia presentation. • I can evaluate the effectiveness and impact of my data collection. •	video, image, edit, snip, slice, cut, transitions, sound effects, voice over, recording, microphone, sound, music, pitch, tempo, atmosphere, audience, purpose Keyboard, desktop computer, pc, type/typing, shift, enter, space bar, keys, mouse, touchpad, backspace, text, format, font, sizing. Word processing, document, password, animation, slide, transitions Technology, data, calculate, cell, column, formula(e), model, row, spreadsheet, sum, table
	<u>National Curriculum Learning outcomes:</u> Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. • I can create my own password to log onto the desktop computers. • Know what a strong password is, and explain strategies for keeping personal information private in a range of contexts • Know how online identities can be different to real life identities • Know the importance of reflecting on their online behaviour, and the impact this can have on their digital footprint • Know and understand that the same friendship values apply online as to face to face • Know strategies for safe and fun experiences in a range of online social environments, giving examples of how to be respectful to others online. • Know that some information on the internet is protected by copyright, consider who has the right to use it, with examples • Know that not all sources of information on the internet are reliable/ accurate, knowing the difference between opinion, belief and fact	Internet, world wide web, browser, social media, plagiarism, viruses, malware, spyware, pop-ups, positive, negative, balanced, impact Reliability, Collaborate, Vlog Critically evaluate, Influence Manipulation, Persuasion, Inappropriate content Plagiarism, Copyright, Data protection