



Cycle A	Unit Title	Expectations	Computing Programme of Study	Software / Apps	Hardware
Autumn 1	We are bug fixers	<ul style="list-style-type: none"> Develop a number of strategies for finding errors in programs. Build up resilience and strategies for problem solving. Increase their knowledge and understanding of Scratch. Recognise a number of common types of bug in software. 	<ul style="list-style-type: none"> Debug programs that accomplish specific goals. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 	<p>Software: Scratch, Snap!, Screencast-o-matic (if appropriate)</p> <p>Apps: Snap! in the web browser (Scratch requires Adobe Flash® Player, which is not available on iPad), Pyonkee</p>	Laptop/desktop computers, microphone (if appropriate)
Autumn 2	We are bloggers	<ul style="list-style-type: none"> Use a search engine to learn about a new topic. Plan, design and deliver an interesting and engaging presentation. Search for and evaluate online images. Create their own original images. Create a video slide cast of a narrated presentation. Develop understanding of how the internet, the web and search engines work. 	<ul style="list-style-type: none"> Understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web. Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of content that accomplish given goals, including collecting, analysing, evaluating and presenting information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>Software: Google, creative commons search engines, PowerPoint / Google Presentation, screencast-omatic / QuickTime Player</p> <p>Apps: Safari, Explain Everything, Adobe Voice</p>	Laptops/desktop PCs with microphones/tablet computers
Spring 1	We are opinion pollsters	<ul style="list-style-type: none"> Understand some elements of survey design. 	<ul style="list-style-type: none"> Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that 	<p>Software: Web browser, Google Forms, Google</p>	Laptop or desktop computer with internet connection

		<ul style="list-style-type: none"> • Understand some ethical and legal aspects of online data collection. • Use the web to facilitate data collection. • Gain skills in using charts to analyse data. • Gain skills in interpreting results. 	<p>accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p> <ul style="list-style-type: none"> • Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. 	<p>Sheets and Google Slides/ InspireData®/Microsoft Excel® and Microsoft Word®/ Freemind</p> <p>Apps: Google Drive/web browser</p>	
Spring 2	We are musicians	<ul style="list-style-type: none"> • Use one or more programs to edit music. • Create and develop a musical composition, refining their ideas through reflection and discussion. • Develop collaboration skills. • Develop an awareness of how their composition can enhance work in other media. 	<ul style="list-style-type: none"> • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Understand computer networks including the internet and the opportunities they offer for communication and collaboration. • Be discerning in evaluating digital content. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour. 	<p>Software: Isle of Tune, Audacity®, LMMS/ GarageBand, MuseScore (optional), SoundBox</p> <p>Apps: Isle of Tune, GarageBand</p>	Computers or tablets, microphones, midi instruments, if available
Summer 1	We are HTML editors	<ul style="list-style-type: none"> • Understand some technical aspects of how the internet makes the web possible. • Use HTML tags for elementary mark up. • Use hyperlinks to connect ideas and sources. • Code up a simple web page with useful content. 	<ul style="list-style-type: none"> • Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. • Use technology safely, respectfully and responsibly; know a range of ways to report concerns and unacceptable behaviour. • Use and combine a variety of software (including internet services) to accomplish given goals, including presenting information. 	<p>Software: Firefox, Brackets, Chrome developer tools</p> <p>Apps: Safari, Koder</p>	Laptop/desktop computers

		<ul style="list-style-type: none"> Understand some of the risks in using the web. 			
Summer 2	We are co-authors	<ul style="list-style-type: none"> Understand the conventions for collaborative online work, particularly in wikis. Be aware of their responsibilities when editing other people's work. Become familiar with Wikipedia, including potential problems associated with its use. Practise research skills. Write for a target audience using a wiki tool. Develop collaboration skills. Develop proofreading skills. 	<ul style="list-style-type: none"> Solve problems by decomposing them into smaller parts. Understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. Use search technologies effectively. Use ... a variety of software (including internet services) ... to ... create ... content ... including ... presenting information. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	<p>Software: Learning platform wiki tools/ MediaWiki/Google Sites/ other hosted wiki</p> <p>Apps: Web browser (e.g. Safari), Wikipedia app</p>	Computers and internet connection, web server (if hosting MediaWiki)

Cycle B	Unit Title	Expectations	Computing Programme of Study	Software / Apps	Hardware
Autumn 1	We are programmers	<ul style="list-style-type: none"> Create an algorithm for an animated scene in the form of a storyboard. Write a program in Scratch to create the animation. Correct mistakes in their animation programs. 	<ul style="list-style-type: none"> Design, write and debug programs that accomplish specific goals; solve problems by decomposing them into smaller parts. Use sequence ... in programs; work with variables and various forms of input and output. Use logical reasoning to detect and correct errors in algorithms and programs. 	<p>Software: Scratch (recommended), Snap!, Microsoft PowerPoint®, Tux Paint, Scratch Jnr</p>	Laptop or desktop computers (recommended) or tablets, cameras (optional), microphones (optional)

			<ul style="list-style-type: none"> • Select, use and combine a variety of software ... to design and create ... content that accomplish(es) given goals, including ... presenting ... information. 	Apps: Pyonkee	
Autumn 2	We are software developers	<ul style="list-style-type: none"> • Develop an educational computer game using selection and repetition. • Understand and use variables. • Start to debug computer programs. • Recognise the importance of user interface design, including consideration of input and output. 	<ul style="list-style-type: none"> • Design, write and debug programs that accomplish specific goals. • Use sequence, selection, and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 	Software: Scratch/Snap! Apps: Pyonkee	Laptop/desktop computer, microphones (not essential)
Spring 1	We are communicators	<ul style="list-style-type: none"> • Develop a basic understanding of how email works. • Gain skills in using email. • Be aware of broader issues surrounding email, including 'netiquette' and online safety. • Work collaboratively with a remote partner. • Experience video conferencing. 	<ul style="list-style-type: none"> • Understand computer networks, including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 	Software: Email system (your school's own system, Gmail or another system), video conferencing software (Skype, Google Hangouts or Janet video conferencing), presentation software Apps: Skype, FaceTime, Hangouts	Webcam and speakers
Spring 2	We are presenters	<ul style="list-style-type: none"> • Gain skills in shooting live video, such as framing 	<ul style="list-style-type: none"> • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that 	Software: Microsoft	Digital cameras, flip cameras (or similar), tablet

		<p>shots, holding the camera steady, and reviewing.</p> <ul style="list-style-type: none"> • Edit video, including adding narration and editing clips by setting in/out points. • Understand the qualities of effective video, such as the importance of narrative, consistency, perspective and scene length. 	<p>accomplish given goals, including collecting, analysing, evaluating and presenting data and information.</p> <ul style="list-style-type: none"> • Work with various forms of input and output. • Use technology safely, respectfully and responsibly. 	<p>Windows Movie Maker® or iMovie, Kinovea/Dartfish</p> <p>Apps: iMovie/Coach's Eye</p>	<p>computers/iPod Touch or similar</p>
Summer 1	We are meteorologists	<ul style="list-style-type: none"> • Understand different measurement techniques for weather, both analogue and digital. • Use computer-based data logging to automate the recording of some weather data. • Use spreadsheets to create charts • Analyse data, explore inconsistencies in data and make predictions • Practise using presentation software and, optionally, video. 	<ul style="list-style-type: none"> • Work with variables and various forms of input and output. • Use logical reasoning to explain how some simple algorithms work. • Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. • Select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. 	<p>Software: Microsoft Excel®/Google Sheets, web browser, Microsoft PowerPoint®/IWB Software</p> <p>Apps: Weather Station by Netatmo, Weather Station.UK, Numbers, Keynote/Explain Everything</p>	<p>Equipment for measuring weather</p>
Summer 2	We are toy designers	<ul style="list-style-type: none"> • Design and make an on-screen prototype of a computer-controlled toy. • Understand different forms of input and output (such as sensors, 	<ul style="list-style-type: none"> • Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems. • Use sequence, selection, and repetition in programs; work with various forms of input and output. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. 	<p>Software: Scratch/Snap!</p> <p>Apps: Pyonkee</p>	<p>Laptops/computers, microphones and speakers, BBC micro:bit and Raspberry Pi</p>

		<p>switches, motors, lights and speakers).</p> <ul style="list-style-type: none">• Design, write and debug the control and monitoring program for their toy.			
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