



Reception		e prerequisite skills they ne tinuous provision.	 children will: Use a range of technol with switches, talking Use technology resour iPad and interactive w Be taught how to use to purposes e.g. iPad to we photographs and lister 	omputing Curriculum through logy resources such as torches tins, voice-recording toys, rces such as, beebots, class chiteboards the resources for different vatch videos, play games, take	 technology How to use simple programs on electronic devices How to use hardware to interact with age-appropriate computer software How to create content such as video 	
	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	We are Treasure HuntersPupils will know that: •You can solve problems using programmable toysPupils will learn to: •Understand that a programmable robot can be controlled by inputting a sequence of instructions.	We are TV Chefs Pupils will know that: •You can film the steps of a recipe Pupils will learn to: . Break down a process into simple, clear steps (an algorithm). •Use different features of a video camera. •Use a video camera to capture moving images.	We are Digital Artists Pupils will know that: •You can use the iPads to create paintings inspired by the work of famous artists Pupils will learn to: • Know how to select and set brushes and colours. •Create artwork in a range of styles on iPads. To use the undo function if mistakes are made and to	We are Publishers Pupils will know that: •You can create a multimedia eBook about what you enjoy and have achieved Pupils will learn to: •Plan a small multimedia eBook. •Choose and import images. •Record audio commentary. Add and format titles and other text.	We are Rhythmic Pupils will know that: • You can create patterns of sounds Pupils will learn to: • Record audio on a digital device. • Program sprites to playback recorded audio in ScratchJr. • Program ScratchJr to create repeating	We are Detectives Pupils will know that: • You can work with a set of data on pirates Pupils will learn to: •Know how data can be structured as records with fields for information. •Understand how data can be organised into groups and subgroups. •Structure data as a tree. •Organise data into a table.





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	 Develop and record sequences of instructions as an algorithm. Program a robot to follow their algorithm. Predict how their programs will work. Debug programs. 	 Record a video using ground rules for filming. Edit a video to include an audio commentary. Develop collaboration skills Discuss work and think about how it could be improved. 	 encourage experimentation. •Use multiple layers in their art. •Transform layers. •Paint on top of photographs. 	 Think carefully about protecting their privacy. Respect other people's copyright. Revise and improve their work. 	rhythms. To explore different effects that can be applied to audio. •Create a repeating percussion pattern using a virtual drum machine. •Experiment with a range of virtual instruments.	•Filter and search data from tables.
	Key Vocabulary: Algorithm, Bug, Computer, Debug, Input, Logical Reasoning, Output, Program, Robot	Key Vocabulary: Abstraction, Algorithm, Audio, Decomposition, Edit, Frame, Narration, Pattern, Storyboard, Video Camera	Key Vocabulary: Analogue, Effect, Pixel, Stylus, Undo, Zoom, bitmap, transform, digital	Key Vocabulary: Audio, clip art, creative commons, eBook, filter, font, images, multimedia, safe search, speech synthesis, voice dictation	Key Vocabulary: Audio, digital, message. Microphone, MIDI, piano roll, repetition, sample, sequencer, speaker, sprite, track, virtual	Key Vocabulary: Database, dataset, field filter, form ,leaf, record, sort, table, tree
	We are Astronauts	We are Game	We are Photographers	We are Safe	We are Animators	We are Zoologists
Year 2	Pupils will know that: •You can programme a sprite to move around the screen.	Testers <u>Pupils will know</u> <u>that:</u> • You play games, trying to work out the rules of the game	Pupils will know that: •You can review and edit digital photos Pupils will learn to : • Consider the technical	Researchers <u>Pupils will know that:</u> •You can retrieve digital content from the Internet for a particular purpose and use mind mapping software.	<u>Pupils will know</u> <u>that:</u> • You can plan, film and add audio to a stop-motion animation.	<u>Pupils will know that:</u> • You can organise data, record it on a spreadsheet and create charts
	 Pupils will learn to: Plan a sequence of instructions to move sprites in ScratchJr. Create, test and debug programs for sprites in ScratchJr. Work with input and output in ScratchJr. Use repetition in their programs. Design costumes for sprites. 	Pupils will learn to: •Observe and describe carefully what happens in computer games. •Use logical reasoning to make predictions of what a program will do and test these. •Think critically about computer games. •Create sequences of instructions for a	and artistic merits of photographs. •Use the iPad camera app. •Take digital photographs. •Review, reject or pick the images they take. •Edit and enhance their photographs Key Vocabulary: Adjustment, camera roll, colour value, crop, filter,	 Pupils will learn to: Develop collaboration skills through working as part of a group. Develop research skills through searching for information on the Internet. Think through privacy implications of their use of search engines. 	 Pupils will learn to: Know how animation works. Use storyboards to plan an animation. Create their own original characters, props and backgrounds for an animation. 	 Pupils will learn to: Sort and classify a group of items by answering questions. Collect data using tick or tally charts. Take, edit and enhance photographs. Use Google Sheets or Microsoft Excel to produce basic charts. Record information on a digital map.





	Key Vocabulary: Abstraction, algorithm, bug, code, debug, event, input, output, parallel processing, program, repetition, scratch, sprite	 virtual robot to solve a problem. Work out strategies for playing a game well. Be aware of how to use games safely and in balance with other activities. Key Vocabulary: Abstraction, algorithm, computational thinking, input, output, parallel processing, pattern recognition, remix, repetition, scratch, source code, sprite 	iCloud, JPEG, pixel, rule of thirds, sensor	 Be more discerning in evaluating online information. Improve note-taking skills through the use of mind mapping. Develop presentation skills through creating and delivering a multimedia presentation. Key Vocabulary: Bing, creative commons, DuckDuckGo, filter, Google, Google custom search, mind map, presentation, safe search, search engine, Wikipedia 	 Film, review and edit a stop-motion animation. Record audio to accompany their animation. Provide constructively critical feedback to their peers. Key Vocabulary: Animation, background, character, flipbook animation, frame, media assets, onion- skinning, prop, soundtrack, stage, stop-motion, storyboard. 	 Summarise what they have learned in a presentation. Key Vocabulary: Binary, binary tree, branching database, classification key, data, database, geolocation data, global position system, pixels, tally charts
Year 3	We are Programmers Pupils will know that: • You can create your own animation in Scratch Pupils will learn to: •Plan and create an algorithm for an animated scene in the form of a storyboard. •Write a program in Scratch to create the animation, including characters, dialogue, costumes, backdrops and sound.	We are Bug Fixers Pupils will know that: • You can recognise common errors and practice solving them Pupils will learn to: • 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.	We Are Presenters Pupils will know that: • You can create an informative presentation about a topic Pupils will learn to: • Develop their web-based research skills. • Structure, prepare and deliver a talk about a given topic or subtopic studied in another curriculum area. • Record a piece to camera. • Edit a movie using static images and green screen footage.	We are Who We Are Pupils will know that: •You can create a set of presentations for different audiences. Pupils will learn to: •Create a number of structured presentations. •Create a narrated presentation. •Consider issues of trust and privacy when sharing information. Key Vocabulary: Comments, creative commons, data centre,	We are Co-Authors Pupils will know that: • You can collaborate to create a mini Wikipedia Pupils will learn to: •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	We are Opinion Pollsters Pupils will know that: • You can create an online opinion poll Pupils will learn to: • Understand some elements of survey design. • Understand some ethical and legal aspects of online data collection. • Use the Internet to facilitate data collection. • Gain skills in using charts to analyse data. • Gain skills in interpreting results.





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	•Review their animation programs and correct mistakes. Key Vocabulary: Abstraction, algorithm, bug, code, debug, decomposition, event, iterative development, output, parallel processing, program, repetition, scratch, sequence, sprite, storyboard	•Recognise a number of common types of bugs in software. <u>Key Vocabulary:</u> Abstraction, algorithm, bug, code, debug, event, input, logical reasoning, output, parallel processing, program, repetition, Scratch, sequence, sprite, variable	•Give constructive, critical feedback on recorded presentations. Key Vocabulary: Camera roll, colour value, creative commons, green screen, 'Ken Burns', pixel, resolution, rushes, search engine	outline, personal information.	potential problems associated with its use. •Practise their research skills. •Write for a target audience using a wiki tool. • Develop collaboration skills. To develop proofreading skills. Key Vocabulary: Algoritihm, creative commons, debug, five pillars, hyperlinks, hypertext mark-up language (HTML), Wiki, Wikipedia	Key Vocabulary: Data, data centre, data protection, digital footprint, filter (database) , personal information, survey.
Year 4	We are Software Developers Pupils will know that: • You can create, develop and test you own game Pupils will learn to : • 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.	We are Makers Pupils will know that: • You can write and test your own micro:bit project Pupils will learn to: • Learn about the input – process – output model of computation. • Program using the MakeCode blockbased environment. • Test and debug programs they write, using an on-screen simulator and the micro:bit. • Convert and transfer a program written on screen to the micro:bit.	We are Musicians Pupils will know that: • You can create your own composition and performance Pupils will learn to: •Create a repeating percussion rhythm. •Play music using virtual instruments. •Compose or edit tunes using the piano roll (pitch and duration) tool. •Perform electronic music using pre-recorded loops, and create their own loops. •Create a multi-track composition or performance using multiple instruments.	We are Bloggers Pupils will know that: • You can create a media- rich blog. Pupils will learn to: • Become familiar with blogs as a medium and a genre of writing. • Create a sequence of blog posts on a theme. • Incorporate additional media. • Comment on the posts of others. • Develop a critical, reflective view of a range of media, including text.	We are Artists Pupils will know that: • You can create pieces of geometric art. Pupils will learn to: • Develop an appreciation of the links between geometry and art. • Become familiar with the tools and techniques of a vector graphics package. • Develop an understanding of turtle graphics. • Experiment with the tools available, refining and developing their work	We are Meteorologists Pupils will know that: • You can take on the role of meteorologists and weather presenters. Pupils will learn to: • 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.





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	Key Vocabulary: Algorithm, bug, debug, input, output, program, repeat loop , repetition, scratch, sequence, sprite, variable	Key Vocabulary: Accelerometer, algorithm, Bluetooth, if/else if/else, javascript, LED, makecode, Micro:bit, object, code, run time, simulator, source code, variable	 Give feedback to others on their compositions and performances. <u>Key Vocabulary:</u> Beat sequencer, live loops, MIDI, piano roll, ample, stave, touch instrument, tracks, velocity, voice 	Key Vocabulary: Creative commons, hyperlinks, hypertext mark- up language (HTML), uniform resource locator (URL) web server	as they apply their own criteria to evaluate it, and receive feedback from their peers. • Develop some awareness of computer-generated art Key Vocabulary: Abstraction, Bitmap, fractal, pixel, repetition, sprite, tessellation, transform, turtle, vector graphics	•Practise using presentation and video software <u>Key Vocabulary:</u> Analogue, data, dataset, digital, field, filter (database), form, input, interface, record, sensor, table
	We are Game	We are	We are Architects	We are Web Developers	We are Adventure	We are VR Designers
	Developers	Cryptographers			Gamers	
	Leverspers		<u>Pupils will know that:</u>	Pupils will know that:	Cumers	Pupils will know that:
	Pupils will know	Pupils will know	You can create your own	You can create your own	Pupils will know	• You can create virtual
	that:	that:	virtual gallery	website about online safety	that:	reality and augmented
	•You can a plan simple	• You can investigate			• You can create an	reality of your own
Year 5	computer game	early methods of	Pupils will learn to:	<u>Pupils will learn to:</u>	interactive, non-linear	
0		communicating over	•Understand the work of	•Know the name and	adventure game.	<u>Pupils will learn to:</u>
	<u>Pupils will learn to:</u>	distances	architects, designers and	function of components		•Explore real-world and
	•Create original artwork		engineers working in 3-D.	making up the school's	Pupils will learn to:	imagined locations in VR.
	and sound for a game.	Pupils will learn to:	•Develop familiarity with a	network.	 Understand how to 	•Create 360°
	•Design and create a	•Be familiar with	simple CAD tool.	•Understand how	plan a non-linear	photosphere images.
	computer program for a	semaphore and Morse	•Develop spatial awareness	information is passed	presentation.	•Link physical objects to
	computer game, which	code.	by exploring and	between the components	•Create text as part of	digital content using QR
	uses sequence, selection, repetition and	•Understand the need for private information	experimenting with a 3-D virtual environment.	that make up the Internet. •Understand what the	a presentation. •Add and edit images	codes. •Create their own VR
	variables.	to be encrypted.	• Develop greater aesthetic	•Understand what the source code for a web page	•Add and edit images in a presentation.	•Create their own VR scene.
	•Detect and correct	•Encrypt and decrypt	• Develop greater aesthetic	looks like and how it can be	•Use hyperlinks for	•Program objects and
	errors in their games.	messages in simple	awareness	edited.	navigation between	interactions in VR.
	•Use iterative	ciphers.	Key Vocabulary:	•Know how a website can be	the slides of a	interactions in vit.
	development	•Appreciate the need to	Computer-aided design	structured.	presentation.	Key Vocabulary:
	techniques.	use complex passwords	(CAD), creative commons,	•Add content to a web page.	•Record and add audio	Accelerometer,
	·····	and to keep them	photorealistic, render	pugo.	narration to a	augmented reality, global
	Key Vocabulary:	secure.	`	Key Vocabulary:	presentation.	positioning system (GPS)
				· · · · · · · · · · · · · · · · · · ·	-	, google cardboard,





bug, co Iterativ logical	ode, debug. ve development, reasoning, m, scratch	• Have some understanding of how encryption works on the Internet. Key Vocabulary: Cipher, codes, cryptanalysis, cryptography, decrypt, encode, encrypt, message, morse code, semaphore, transmit		Creative commons, hyperlinks, hypertext mark- up language (HTML), hypertext transfer protocol (HTTP), internet, internet protocol (IP) addresses, network switch, packets of data, protocol, tag, uniform resource locator (URL), web browser, web server, world wide web	• Use commenting tools to give feedback on a presentation. Key Vocabulary: Abstraction, colour value, creative commons, hyperlink, mp3, pixel, safe search	photosphere, QR code, share code, stereographic, virtual reality (VR)
Year 6 We are		We are Computational	We are Publishers	We are Connected	We are Advertisers	We are AI Developers
Pupils that: • You of modifiers • You of modifiers • You of modifiers • Under computers • Organ input t • Gener design brief. • Plan a by decorres smalle • Work compo • Desig progra • Use co others their w Key V	s will know I can make a i cation to make a i y interactive i s will learn to : i rstand how I iters use stored i ms to connect i co output. i rate and evaluate i s in response to a i a complex project i omposing it into i r parts. i with physical i m for an i ided system. i riteria to provide i with feedback on i vork i Cocabulary: i rometer, i	Thinkers Pupils will know that: •You can participate in some hands-on unplugged activities Pupils will learn to: •Develop the ability to reason logically about algorithms. •Understand how some key algorithms can be expressed as programs. •Understand that some algorithms are more efficient than others for the same problem. •Understand common algorithms for searching and sorting a list. Key Vocabulary: Abstraction, algorithm, binary search, decomposition, divide and conquer, graph, greedy algorithm,	 Pupils will know that: You can produce a class year book or school magazine Pupils will learn to: Manage or contribute to large collaborative projects, facilitated using online tools. Write and review content. Source digital media while demonstrating safe, respectful and responsible use. Design and produce a high-quality print document. Key Vocabulary: Creative commons, desktop publishing (DTP), eBook, ePub, folder, image, portable document format (PDF), text 	 Pupils will know that: You can use a school blogging platform to explore issues related to social media Pupils will learn to: Understand appropriate rules or guidelines for a civil online discussion. Explore how search results are selected and ranked. Argue their point effectively, supporting their views with sources. Counter someone else's argument while showing respect and tolerance. Judge the reliability of an online source. Develop some strategies for dealing with online bullying Key Vocabulary: Anchor tag bias, blog, fake news, hyperlink, netural 	 Pupils will know that: You can shoot and edit a final version of an advert Pupils will learn to: Think critically about how video is used to promote a cause. Create a storyboard for an effective advert for a cause . Work collaboratively to shoot original footage and source additional content. Acknowledge intellectual property rights. Work collaboratively to edit the assembled content to make an effective advert. Key Vocabulary: Creative commons, export, final cut, rough cut, rushes, storyboard 	 Pupils will know that: You can program a self- driving car and consider the ethics of AI Pupils will learn to: Understand how decision trees can be trained automatically to classify data. Show how speech recognition works. Explore how a neural net recognises images. Train a neural net to classify images. Train a machine learning system to identify sentiments. Consider some ethical principles in designing AI systems. Key Vocabulary: Artificial intelligence, classifier, decision tree, image recognition, label, layer, machine learning,





decomposition, edge	linear search,	point of view, online	model, natural language
connector, embedded	quicksort, search,	bullying (cyberbullying)	processing, neural
system, input,	search algorithm,	plausible, reliable, social	network, node, sentiment
interactive, light-	selection sort, sort	media, source	analysis, spectrogram,
emitting diode (LED),			speech recognition, test
makecode, micro:bit,			data, training data,
microprocessor, output,			Watson.
simulator, system			
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