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Computing – Curriculum Progression Map

Cycle A Term 1	Roald Dahl (Whole school topic)						
	EYFS	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**
Early Learning Goals (EYFS) **National Curriculum**	**Pupils will be learning to:** Communication & Language Development: ELG1 - Listening & Understanding PDED ELG3 - follow instructions with several ideas or actions ELG3 – Set and work towards simple goals ELG4 – Show resilience and perseverance in the face of challenge ELG5 – play cooperatively, taking turns Physical Development: ELG7 – Use a range of small tools Mathematics ELG12 - Explore and represent patterns Literacy ELG10 – Writing Understanding the World: ELG13 - Know some similarities and differences between things in the past and now Expressive Arts & Design: ELG16 - Safely use and explore a variety of materials, tools and techniques	**Pupils should be taught:** • 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 • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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		**Pupils should be taught to**: • 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 • 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 • 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.		

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	ELG16 - Share their creations, explaining the process they have used; ELG17 – Being imaginative & expressive	internet or other online technologies.		
End points	**Identify technology.**	**Identify a computer and its main parts.**	**Explain how digital devices function.**	**Identify how to use a search engine.**
Key Concepts	***Computing systems and networks***	***Computing systems and networks***	***Computing systems and networks***	***Computing systems and networks***
Focus Area **(YR1 – 6 Teach Computing units)**	Technology	Technology around us *(Year 1)* All units should begin with a brief recap of online safety expectations.	Connecting computers *(Year 3)* All units should begin with a brief recap of online safety expectations.	Communication and collaboration *(Year 6)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage	Privacy and security (P) Copyright and ownership (C)	Self-image and identity (S) Online relationships (F) Online reputation (R)	Self-image and identity (S) Online reputation (R) Online bullying (B)	Self-image and identity (S) Online relationships (F) Privacy and security (P)
Vocabulary	Screen Mouse Keyboard Equipment Buttons Paint	Technology Computer Mouse/trackpad Keyboard Screen Click Drag Draw Double-click Input device Shift Space bar Capital letter Full stop	Digital device Input Output Process Program Connection Network Network switch Server Wireless Access Point (WAP)	Search engine Google DuckDuckGo Index Crawler Bot Ranking Search engine optimisation Links Web crawlers Content creator Selection Internet One-way Two-way One-to-one One-to-many SMS Email WhatsApp Blog YouTube Twitter
Equipment / Apps	**Equipment:** Cameras, mobile devices, audio recording devices	**Equipment:** Laptops (keyboards and trackpads) **Apps, Software, Sites:**	**Equipment:** Laptops (keyboards and trackpads) Webcams, mice, microphones iPad	**Equipment:** Laptops

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			paintz.app	**Apps, Software, Sites:** Google Docs or Microsoft Word paintz.app	
Substantive and disciplinary knowledge	1	Discuss how technology is used at school and at home	Technology in our classroom Identify technology • Explain technology as something that helps us • Locate examples of technology in the classroom • Explain how these technology examples help us	How does a digital device work? Explain how digital devices function • Explain that digital devices accept inputs • Explain that digital devices produce outputs • Follow a process	Internet addresses Explain the importance of internet addresses • Recognise that data is transferred using agreed methods • Explain that internet devices have addresses • Describe how computers use addresses to access websites
	2	Model and enable the use of real and imaginary technologies, including online tools	Using Technology Identify a computer and its main parts • Name the main parts of a computer • Switch on and log into a computer • Use a mouse to click and drag	What parts make up a digital device? Identify input and output devices • Classify input and output devices • Design a digital device • Describe a simple process	Data Packets Recognise how data is transferred across the internet • Identify and explain the main parts of a data packet • Explain that data is transferred over networks in packets • Explain that all data transferred over the internet is in packets

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	3	Use a range of devices such as cameras, mobile devices, audio recording devices	Developing mouse skills Use a mouse in different ways • Use a mouse to open a program • Click and drag to make objects on a screen • Use a mouse to create a picture	How do digital devices help us? Recognise how digital devices can change the way we work • Explain how I use digital devices for different activities • Recognise similarities between using digital devices and non-digital tools • Suggest differences between using digital devices and non-digital tools	Working together Explain how sharing information online can help people to work together • Recognise how to access shared files stored online • Send information over the internet in different ways • Explain that the internet allows different media to be shared
	4	Interact with computer systems using different inputs – e.g., by using a mouse, voice, speech or touch	Using a computer keyboard Use a keyboard to type on a computer • Say what a keyboard is for • Type my name on a computer • Save my work to a file	How am I connected? Explain how a computer network can be used to share information • Recognise different connections • Explain how messages are passed through multiple connections • Discuss why we need a network switch	Shared working Evaluate different ways of working together online • Identify different ways of working together online • Recognise that working together on the internet can be public or private • Explain how the internet enables effective collaboration
	5	Use a keyboard to copy or write a title or caption for work	Developing keyboard skills Use the keyboard to edit text • Open my work from a file	How are computers connected? Explore how digital devices can be connected	How we communicate Recognise how we communicate using technology

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Computing – Curriculum Progression Map

			• Use the arrow keys to move the cursor • Delete letters	• Recognise that a computer network is made up of a number of devices • Demonstrate how information can be passed between devices • Explain the role of a switch, server, and wireless access point in a network	• Explain the different ways in which people communicate • Identify that there are a variety of ways to communicate over the internet • Choose methods of communication to suit particular purposes
	6	Use clipart to add an image to your title or caption	Using a computer responsibly Create rules for using technology responsibly • Identify rules to keep us safe and healthy when we are using technology in and beyond the home • Give examples of some of these rules • Discuss how we benefit from these rules	What does our school network look like? Recognise the physical components of a network • Identify how devices in a network are connected together • Identify networked devices around me • Identify the benefits of computer networks	Communicating responsibly Evaluate different methods of online communication • Compare different methods of communicating on the internet • Decide when I should and should not share information online • Explain that communication on the internet may not be private
Cycle A Term 2		**Crunchy Leaves and Muddy Puddles**		**Footsteps through time**	**Bouncing bombs**
		EYFS	**YR1 / YR2**	**YR3 / YR4**	**YR5 / YR6**
End Points		**Explore computer applications and technologies.**	**Use a computer on my own to paint a picture**	**Explain that animation is a sequence of drawings or photographs.**	**Identify digital devices that can record video**
Key Concepts		***Creating Media***	***Creating Media***	***Creating Media***	***Creating Media***

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Computing – Curriculum Progression Map

Focus Area **(YR1 – 6 Teach Computing units)**	Digital Literacy	Digital Painting *(Year 1)* All units should begin with a brief recap of online safety expectations.	Stop-frame Animation *(Year 3)* All units should begin with a brief recap of online safety expectations.	Video Production *(Year 5)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage	Privacy and security (P) Copyright and ownership (C)	Self-image and identity (S) Online relationships (F) Online reputation (R)	Self-image and identity (S) Online reputation (R) Online bullying (B)	Self-image and identity (S) Online relationships (F) Privacy and security (P)
Vocabulary	Collect Count Organise Sort Compare Set	Tool Paintbrush Erase Fill Undo Shape tools Line tool Brush style Brush size	Animation Flip book Stop-frame Sequence Image Photograph Onion-skinning Delete Frame Media Import Transition	Video Audio/sound Recording Storyboard Script Soundtrack Dialogue Capture Zoom Storage Digital Tape AV (audio visual) Videographer Video techniques: zoom, pan, tilt, angle Lighting Setting YouTuber Content Camera angle Export Split Trim/clip Edit End credits Timeline Transitions Retake/reshoot Special effects Title screen
Equipment / Apps	**Equipment:** Laptops (keyboards and trackpads) **Apps, Software, Sites:** 2Simple	**Equipment:** Laptops (keyboards and trackpads) **Apps, Software, Sites:** paintz.app	**Equipment:** iPads **Apps, Software, Sites:** iMotion iMovie	**Equipment:** iPads Laptops **Apps, Software, Sites:** Flipgrid – *set up Google Classroom link* Movie Maker

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Computing – Curriculum Progression Map

Substantive and disciplinary knowledge	1	Play with imaginary technologies in role-play	How can we paint using computers? Describe what different freehand tools do • Make marks on a screen and explain which tools I used • Draw lines on a screen and explain which tools I used • Use the paint tools to draw a picture	Can a picture move? Explain that animation is a sequence of drawings or photographs • Draw a sequence of pictures • Create an effective flip book—style animation • Explain how an animation/flip book works	What is video? Explain what makes a video effective • Explain that video is a visual media format • Identify features of videos • Compare features in different videos
	2	Explore a range of computer applications, e.g., drawing apps, age-appropriate games etc.,	Using shapes and lines Use the shape tool and the line tools • Make marks with the square and line tools • Use the shape and line tools effectively • Use the shape and line tools to recreate the work of an artist	Frame by frame Relate animated movement with a sequence of images • Predict what an animation will look like • Explain why little changes are needed for each frame • Create an effective stop-frame animation	Filming techniques Identify digital devices that can record video • Identify and find features on a digital video recording device • Experiment with different camera angles • Make use of a microphone
	3	Use the class SMART board / SMART table to explore apps.	Making careful choices Make careful choices when painting a digital picture	What's the story? Plan an animation	Using a storyboard Capture video using a range of techniques

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Computing – Curriculum Progression Map

			• Choose appropriate shapes • Make appropriate colour choices • Create a picture in the style of an artist	• Break down a story into settings, characters and events • Describe an animation that is achievable on screen • Create a storyboard	• Suggest filming techniques for a given purpose • Capture video using a range of filming techniques • Review how effective my video is
	4	Model using web pages to find things out	Why did I choose that? Explain why I chose the tools I used • Know that different paint tools do different jobs • Choose appropriate paint tools and colours to recreate the work of an artist • Say which tools were helpful and why	Picture perfect Identify the need to work consistently and carefully • Use onion skinning to help me make small changes between frames • Review a sequence of frames to check my work • Evaluate the quality of my animation	Planning a video Create a storyboard • Outline the scenes of my video • Decide which filming techniques I will use • Create and save video content
	5	Follow shortcuts, favourites or weblinks to explore simple websites	Painting all by myself Use a computer on my own to paint a picture • Make dots of colour on the page • Change the colour and brush sizes • Use dots of colour to create a picture in the	Evaluate and make it great! Review and improve an animation • Explain ways to make my animation better • Evaluate another learner's animation • Improve my animation based on feedback	Importing and editing video Identify that video can be improved through reshooting and editing • Store, retrieve, and export my recording to a computer • Explain how to improve a video by reshooting and editing

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Computing – Curriculum Progression Map

			style of an artist on my own		• Select the correct tools to make edits to my video
	6	Search for a specific topic on the web. E.g., your favourite animal.	Comparing computer art and painting Compare painting a picture on a computer and on paper • Explain that pictures can be made in lots of different ways • Spot the differences between painting on a computer and on paper • Say whether I prefer painting using a computer or using paper	Lights, camera, action! Evaluate the impact of adding other media to an animation • Add other media to my animation • Explain why I added other media to my animation • Evaluate my final film	Video evaluation Consider the impact of the choices made when making and sharing a video • Make edits to my video and improve the final outcome • Recognise that my choices when making a video will impact on the quality of the final outcome • Evaluate my video and share my opinions
Cycle A Term 3		**Scaly Skin (Dinosaurs)**		**Belonging to a community**	**Swords and Sandals**
		EYFS	**YR1** / **YR2**	**YR3** / **YR4**	**YR5** / **YR6**
End Points		**Know what devices can be used to take photographs.**	**Use a digital device to take a photograph.**	**Use a digital device to record sound.**	**Plan features of a web page.**
Key Concepts		***Creating Media***	***Creating Media***	***Creating Media***	***Creating Media***
Focus Area **(YR1 – 6 Teach Computing units)**		Digital Literacy	Digital Photography *(Year 2)* All units should begin with a brief recap of online safety expectations. All units should begin with a brief recap of online safety expectations.	Audio Production *(Year 4)* All units should begin with a brief recap of online safety expectations.	Web Page Creation *(Year 6)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage		Self-image and identity (S) Online relationships (F) Online reputation (R)	Online bullying (B) Managing online information (I) Health, well-being and lifestyle (H)	Online relationships (F) Privacy and security (P)	Health, well-being and lifestyle (H) Copyright and ownership (C) Online bullying (B)

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Vocabulary		Paint Sounds Pictures Words Images	Device Camera Photograph Capture Image Digital Landscape Portrait Horizontal Vertical Field of view Narrow Wide Framing Focal point Subject Compose Natural lighting Artificial lighting Flash Focus Background Foreground Editing tools Filter	Audio Record Playback Microphone Speaker Headphones Input Output Sound Record Start Pause Stop Podcast Save File Selection Open Edit Mixing Time shift	Website Web page Browser Media Hypertext Markup Language (HTML) Logo Layout Header Copyright Fair use Home page Device Google Sites Breadcrumb trail Navigation hyperlink Subpage External link Embed
Equipment / Apps		**Equipment:** iPads (cameras) **Apps, Software, Sites:**	**Equipment:** iPads (cameras) **Apps, Software, Sites:** https://pixlr.com/x/	**Equipment:** Laptops **Apps, Software, Sites:** Audacity	**Equipment:** Laptops **Apps, Software, Sites:** Google Sites Pixabay
Substantive and disciplinary knowledge	1	Operate devices and equipment in school, sometimes with adult support	Taking Photographs Use a digital device to take a photograph • Recognise what devices can be used to take photographs • Talk about how to take a photograph • Explain what I did to capture a digital photo	Digital recording Identify that sound can be recorded • Identify the input and output devices used to record and play sound • Use a computer to record audio • Explain that the person who records the sound can say who is allowed to use it	What makes a good website? Review an existing website and consider its structure • Explore a website • Discuss the different types of media used on websites • Know that websites are written in HTML

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	2	Speculate about why things happen or how things work	Landscape or portrait? Make choices when taking a photograph • Explain the process of taking a good photograph • Take photos in both landscape and portrait format • Explain why a photo looks better in portrait or landscape format	Recording sounds Explain that audio recordings can be edited • Re-record my voice to improve my recording • Inspect the soundwave view to know where to trim my recording • Discuss what sounds can be added to a podcast	How would you layout your web page? Plan the features of a web page • Recognise the common features of a web page • Suggest media to include on my page • Draw a web page layout that suits my purpose
	3	Tour the school photographing the various ICT equipment	What makes a good photograph? Describe what makes a good photograph • Identify what is wrong with a photograph • Discuss how to take a good photograph • Improve a photograph by retaking it	Creating a podcast Recognise the different parts of creating a podcast project • Explain how sounds can be combined to make a podcast more engaging • Save my project so the different parts remain editable • Plan appropriate content for a podcast	Copyright or CopyWRONG? Consider the ownership and use of images (copyright) • Say why I should use copyright-free images • Find copyright-free images • Describe what is meant by the term 'fair use'
	4	Use recording devices to say something about themselves or express their ideas	Lighting Decide how photographs can be improved • Explore the effect that light has on a photo	Editing digital recordings Apply audio editing skills independently • Record content following my plan	How does it look? Recognise the need to preview pages • Add content to my own web page

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Computing – Curriculum Progression Map

			• Experiment with different light sources • Explain why a picture may be unclear	• Review the quality of my recordings • Improve my voice recordings	• Preview what my web page looks like • Evaluate what my web page looks like on different devices and suggest/make edits
	5	Model how to and support the saving and retrieval of children's work	Effects Use tools to change an image • Recognise that images can be changed • Use a tool to achieve a desired effect • Explain my choices	Combining audio Combine audio to enhance my podcast project • Open my project to continue working on it • Arrange multiple sounds to create the effect I want • Explain the difference between saving a project and exporting an audio file	Follow the breadcrumbs Outline the need for a navigation path • Explain what a navigation path is • Describe why navigation paths are useful • Make multiple web pages and link them using hyperlinks
	6	With support add your taken photographs to a device and print.	Is it real? Recognise that photos can be changed • Apply a range of photography skills to capture a photo • Recognise which photos have been changed • Identify which photos are real and which have been changed	Evaluating podcasts Evaluate the effective use of audio • Listen to an audio recording to identify its strengths • Suggest improvements to an audio recording • Choose appropriate edits to improve my podcast	Think before you link! Recognise the implications of linking to content owned by other people • Explain the implication of linking to content owned by others • Create hyperlinks to link to other people's work • Evaluate the user experience of a website
Cycle A		**Rio De Vida (Rainforests)**		**Extreme Earth**	**By Royal Appointment**

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Term 4	EYFS	YR1	YR2	YR3	YR4	YR5	YR6
End points	**Make choices using technology.**	**Compare groups of objects and answer questions about groups of objects.**		**Create a branching database.**		**Create a spreadsheet to plan an event.**	
Key Concepts	**Computer systems and networks**	***Data and Information***		***Data and Information***		***Data and Information***	
Focus Area **(YR1 – 6 Teach Computing units)**	Audio	Grouping Data *(Year 1)* All units should begin with a brief recap of online safety expectations.		Branching Databases *(Year 3)* All units should begin with a brief recap of online safety expectations.		Introduction to spreadsheets *(Year 6)* All units should begin with a brief recap of online safety expectations.	
Project Evolve Coverage	Self-image and identity (S) Online relationships (F) Online reputation (R)	Online bullying (B) Managing online information (I) Health, well-being and lifestyle (H)		Online relationships (F) Privacy and security (P)		Health, well-being and lifestyle (H) Copyright and ownership (C) Online bullying (B)	
Vocabulary	Equipment Buttons Paint Sounds Compare Set	Object Label Group Search Image Property Data set	Value Less Most Fewest Same	Attribute Value Questions Table Objects Branching database	Compare Organise Pictogram Decision tree	Spreadsheet Data Data heading Data set Cells Columns and rows Application Format Common attribute	Formula Calculation Input Output Cell reference Operation Range Duplicate
Equipment / Apps	**Equipment:** Laptops, iPads, stereo, audio CDs.	**Equipment:** Laptops **Apps, Software, Sites:** Microsoft Office Suite or Google Drive, Docs etc.		**Equipment:** Laptops **Apps, Software, Sites:** https://J2e.com – *login using Google*		**Equipment:** Laptops **Apps, Software, Sites:** Google Sheets or MS Excel Google Maps	

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Substantive and disciplinary knowledge	1	Listen to stories, music, watch animations using digital devices	Label and match Label objects • Describe objects using labels • Match objects to groups • Identify the label for a group of objects	Yes or no questions Create questions with yes/no answers • Investigate questions with yes/no answers • Make up a yes/no question about a collection of objects • Create two groups of objects separated by one attribute	What is a spreadsheet? Create a data set in a spreadsheet • Collect data • Suggest how to structure my data • Enter data into a spreadsheet
	2	Choose a website appropriate for an activity	Group and count Identify that objects can be counted • Count objects • Group objects • Count a group of objects	Making groups Identify the attributes needed to collect data about an object • Select an attribute to separate objects into groups • Create a group of objects within an existing group • Arrange objects into a tree structure	Modifying spreadsheets Build a data set in a spreadsheet • Explain what an item of data is • Choose an appropriate format for a cell • Apply an appropriate format to a cell
	3	Choose appropriate images for a specific purpose (e.g., images of trains)	Describe an object Describe objects in different ways • Describe an object • Describe a property of an object • Find objects with similar properties	Creating a branching database Create a branching database • Select objects to arrange in a branching database • Group objects using my own yes/no questions • Test my branching database to see if it works	What's the formula? Explain that formulas can be used to produce calculated data • Explain which data types can be used in calculations • Construct a formula in a spreadsheet • Identify that changing inputs changes outputs

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	4	Share work online (e.g., upload to a website)	Making different groups Count objects with the same properties • Group similar objects • Group objects in more than one way • Count how many objects share a property	Structuring a branching database Explain why it is helpful for a database to be well structured • Create yes/no questions using given attributes • Compare two branching database structures • Explain that questions need to be ordered carefully to split objects into similarly sized groups	Calculate and duplicate Apply formulas to data • Calculate data using different operations • Create a formula which includes a range of cells • Apply a formula to multiple cells by duplicating it
	5	Match images to a sound	Comparing groups Compare groups of objects • Choose how to group objects • Describe groups of objects • Record how many objects are in a group	Using a branching database Plan the structure of a branching database • Independently create questions to use in a branching database • Create questions that will enable objects to be uniquely identified • Create a physical version of a branching database	Event planning Create a spreadsheet to plan an event • Use a spreadsheet to answer questions • Explain why data should be organised • Apply a formula to calculate the data I need to answer questions
	6	Represent/express ideas & feelings using technology.	Answering questions Answer questions about groups of objects	Two ways of presenting information Independently create an identification tool • Create a branching database that reflects my plan	Presenting data Choose suitable ways to present data • Produce a chart

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			• Decide how to group objects to answer a question • Compare groups of objects • Record and share what I have found		• Work with a partner to test my identification tool • Suggest real-world uses for branching databases	• Use a chart to show the answer to questions • Suggest when to use a table or chart
Cycle A Term 5		**Bounce**			**Romans Rule!**	**Up the chimney**
		EYFS	**YR1**	**YR2**	**YR3** / **YR4**	**YR5** / **YR6**
End points		**Plan a simple program.**	**Combine four direction commands to make sequences.**		**Create a project from a task description.**	**Design a project that builds on a given example.**
Key Concepts		***Programming***	***Programming***		***Programming***	***Programming***
Focus Area **(YR1 – 6 Teach Computing units)**		Computing	Moving a Robot *(Year 1)* All units should begin with a brief recap of online safety expectations.		Sequencing sounds *(Year 3)* All units should begin with a brief recap of online safety expectations.	Variables in Games *(Year 6)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage		Online bullying (B) Managing online information (I). Health, well-being and lifestyle (H)	Privacy and security (P) Copyright and ownership (C)		Managing online information (I) Health, well-being and lifestyle (H) Copyright and ownership (C)	Online reputation (R) Managing online information (I)
Vocabulary		Technology Share Create Internet Mechanical toy Wind-up toy Programmable Toy	Forwards Backwards Turn Clear Go Commands Instructions Directions Plan Algorithm Program Route		Scratch Programming Blocks Commands Code Sprite Costume Stage Backdrop Motion, Point in direction Go to Glide Sequence Event Task Design Run the code Algorithm	Variable Value Event Algorithm Code Task debug

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				Turn Bug Debug	
Equipment / Apps		**Equipment:** iPads BeeBots **Apps, Software, Sites:** BeeBot App (iPads)	**Equipment:** iPads BeeBots **Apps, Software, Sites:** BeeBot App (iPads)	**Equipment:** Laptops **Apps, Software, Sites:** https://scratch.mit.edu – *save to server or Google Drive* Scratch 3	**Equipment:** Laptops **Apps, Software, Sites:** Scratch 3
Substantive and disciplinary knowledge	1	Play Simon Says (algorithms/debugging)	Buttons Explain what a given command will do • Predict the outcome of a command on a device • Match a command to an outcome • Run a command on a device	Introduction to Scratch Explore a new programming environment • Identify the objects in a Scratch project (sprites, backdrops) • Explain that objects in Scratch have attributes (linked to) • Recognise that commands in Scratch are represented as blocks	Introducing variables Define a 'variable' as something that is changeable • Identify examples of information that is variable • Explain that the way a variable change can be defined • Identify that variables can hold numbers or letters
	2	Take a simple 'problem' and split it into smaller steps – E.g., to dress a teddy (computational thinking - decomposition)	Directions Act out a given word • Follow an instruction • Recall words that can be acted out • Give directions	Programming sprites Identify that commands have an outcome • Identify that each sprite is controlled by the commands I choose • Create a program following a design	Variables in programming Explain why a variable is used in a program • Identify a program variable as a placeholder in memory for a single value • Explain that a variable has a name and a value

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				• Choose a word which describes an on-screen action for my plan	• Recognise that the value of a variable can be changed
	3	Come up with a set of instructions (pictures of arrows) to navigate a partner around a simple obstacle course in PE (algorithms)	Forwards and backwards Combine forwards and backwards commands to make a sequence • Compare forwards and backwards movements • Start a sequence from the same place • Predict the outcome of a sequence involving forwards and backwards commands	Sequences Explain that a program has a start • Start a program in different ways • Create a sequence of connected commands • Explain that the objects in my project will respond exactly to the code	Improving a game Choose how to improve a game by using variables • Decide where in a program to change a variable • Make use of an event in a program to set a variable • Recognise that the value of a variable can be used by a program
	4	'Program' each other to find hidden objects (programming)	Four directions Combine four direction commands to make sequences • Compare left and right turns • Experiment with turn and move commands to move a robot • Predict the outcome of a sequence involving up to four commands	Ordering commands Recognise that a sequence of commands can have an order • Explain what a sequence is • Combine sound commands • Order notes into a sequence	Designing a game Design a project that builds on a given example • Choose the artwork for my project • Create algorithms for my project • Explain my design choices

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	5	Record instructions for friends (programming) Listen to and follow recorded instructions	Getting there Plan a simple program • Explain what my program should do • Choose the order of commands in a sequence • Debug my program	Looking good Change the appearance of my project • Build a sequence of commands • Decide the actions for each sprite in a program • Make design choices for my artwork	Design to code Use my design to create a project • Create the artwork for my project • Choose a name that identifies the role of a variable • Test the code that I have written
	6	Explore playing with programmable toys (e.g., Bee bots, remote-controlled cars, etc.) (programming)	Routes Find more than one solution to a problem • Identify several possible solutions • Plan two programs • Use two different programs to get to the same place	Making an instrument Create a project from a task description • Identify and name the objects I will need for a project • Relate a task description to a design • Implement my algorithm as code	Improving and sharing Evaluate my project • Identify ways that my game could be improved • Use variables to extend my game • Share my game with others
Cycle A Term 6		**Know Your Place - local history (Whole school topic)**			
		EYFS	**YR1 / YR2**	**YR3 / YR4**	**YR5 / YR6**
End points		**Describe a series of instructions as a sequence.**	**Create and debug a program that I have written.**	**Create a program that uses count-controlled loops to produce a given outcome**	**Develop a program to use inputs and outputs on a controllable device**
Key Concepts		***Programming***	***Programming***	***Programming***	***Programming***
Focus Area		Algorithms	Robot Algorithms *(Year 2)*	Repetition in Shapes *(Year 4)*	**Sensing movement**

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(YR1 – 6 Teach Computing units)			All units should begin with a brief recap of online safety expectations.	All units should begin with a brief recap of online safety expectations.	***(Year 6) -*** *Replace with 'Selection in Quizzes' if no access to Microbits* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage		Online bullying (B) Managing online information (I). Health, well-being and lifestyle (H)	Privacy and security (P) Copyright and ownership (C)	Managing online information (I) Health, well-being and lifestyle (H) Copyright and ownership (C)	Online reputation (R) Managing online information (I)
Vocabulary		Choices Internet Website Technology Share Create Internet Mechanical toy Wind-up toy Programmable Toy	Instructions Sequence Clear Unambiguous Algorithm Program Sequence Order Commands Prediction route debugging	Program Turtle Commands Code snippet Algorithm Design Debug Logo Pattern Repeat Repetition Count-controlled loop Value Trace Decompose Procedure	Micro:bit MakeCode Input Process Output USB Condition If then else Variable Random Input Selection Sensing Navigation Compass Algorithm Task Code Debug
Equipment / Apps			**Equipment:** iPads BeeBots **Apps, Software, Sites:** BeeBot App (iPads)	**Equipment:** Laptops iPads **Apps, Software, Sites:** https://turtleacademy.com/playground – *login using Google* Logotacular	**Equipment:** Laptops **Apps, Software, Sites:** **Microbits *currently not in school – request from hub in advance***
Substantive and disciplinary knowledge	1	Draw or give simple instructions to a partner to build a simple structure using building blocks (programming)	Giving instructions Describe a series of instructions as a sequence • Follow instructions given by someone else	Programming a screen turtle Identify that accuracy in programming is important • Program a computer by typing commands	The micro:bit Create a program to run on a controllable device

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Computing – Curriculum Progression Map

			• Choose a series of words that can be enacted as a sequence • Give clear instructions	• Explain the effect of changing a value of a command • Create a code snippet for a given purpose	• Apply my knowledge of programming to a new environment • Test my program on an emulator • Transfer my program to a controllable device
	2	Sequence a series of photographs to recount a story (algorithms) Invite the children to point out simple errors in images or texts (debugging)	Same but different Explain what happens when we change the order of instructions • Use the same instructions to create different algorithms • Use an algorithm to program a sequence on a floor robot • Show the difference in outcomes between two sequences that consist of the same commands	Programming letters Create a program in a text-based language • Use a template to create a design for my program • Write an algorithm to produce a given outcome • Test my algorithm in a text-based language	Go with the flow Explain that selection can control the flow of a program • Identify examples of conditions in the real world • Use a variable in an if, then, else statement to select the flow of a program • Determine the flow of a program using selection
	3	Look at a set of drawn instructions (e.g., arrows) and predict what will happen if they were entered into a programmable toy (predicting algorithms)	Making predictions Use logical reasoning to predict the outcome of a program • Follow a sequence • Predict the outcome of a sequence • Compare my prediction to the program outcome	Patterns and repeats Explain what 'repeat' means • Identify everyday tasks that include repetition as part of a sequence, eg brushing teeth, dance moves • Identify patterns in a sequence	Sensing inputs Update a variable with a user input • Use a condition to change a variable • Experiment with different physical inputs

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Computing – Curriculum Progression Map

				• Use a count-controlled loop to produce a given outcome	• Explain that checking a variable doesn't change its value
	4	Understand that operations can be predicted and have a cause and effect (e.g., press a button turns on/off) Develop an understanding that an operation has a predictable result (e.g., clicking a mouse selects an object) (predicting algorithms)	Mats and routes Explain that programming projects can have code and artwork • Explain the choices I made for my mat design • Identify different routes around my mat • Test my mat to make sure that it is usable	Using loops to create shapes Modify a count-controlled loop to produce a given outcome • Identify the effect of changing the number of times a task is repeated • Predict the outcome of a program containing a count-controlled loop • Choose which values to change in a loop	Finding you way Use a conditional statement to compare a variable to a value • Use an operand (e.g., <>=) in an if, then statement • Explain the importance of the order of conditions in else, if statements • Modify a program to achieve a different outcome
	5	Use simple software applications to make something happen (e.g., Bee Bot iPad app)	Algorithm Design Design an algorithm • Explain what my algorithm should achieve • Create an algorithm to meet my goal • Use my algorithm to create a program	Breaking things down Decompose a task into small steps • Identify 'chunks' of actions in the real world • Use a procedure in a program • Explain that a computer can repeatedly call a procedure	Designing a step counter Design a project that uses inputs and outputs on a controllable device • Decide what variables to include in a project • Design the algorithm for my project • Design the program flow for my project

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Computing – Curriculum Progression Map

	6	Look at the cables that connect computers to the school network (network)	Debugging Create and debug a program that I have written • Test and debug each part of the program • Plan algorithms for different parts of a task • Put together the different parts of my program	Creating a program Create a program that uses count-controlled loops to produce a given outcome • Design a program that includes count-controlled loops • Make use of my design to write a program • Develop my program by debugging it	Making a step counter Develop a program to use inputs and outputs on a controllable device • Create a program based on my design • Test my program against my design • Use a range of approaches to find and fix bugs

Cycle B	Marvellous Me

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Computing – Curriculum Progression Map

Term 1	(Whole school topic)						
	EYFS	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**
Early Learning Goals (EYFS) **National Curriculum**	**Pupils will be learning to:** Communication & Language Development: ELG1 - Listening & Understanding PDED ELG3 - follow instructions with several ideas or actions ELG3 – Set and work towards simple goals ELG4 – Show resilience and perseverance in the face of challenge ELG5 – play cooperatively, taking turns Physical Development: ELG7 – Use a range of small tools Mathematics ELG12 - Explore and represent patterns Literacy ELG10 – Writing Understanding the World: ELG13 - Know some similarities and differences between things in the past and now Expressive Arts & Design: ELG16 - Safely use and explore a variety of materials, tools and techniques	**Pupils should be taught:** • 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 • use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • 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.		**Pupils should be taught to**: • 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 • 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 • 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.		

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Computing – Curriculum Progression Map

	ELG16 - Share their creations, explaining the process they have used; ELG17 – Being imaginative & expressive			
End points	**Identify technology**	**Recognise the uses and features of information technology**	**Recognise how networked devices make up the internet**	**Contribute to a shared project online**
Key Concepts	***Computing systems and networks***	***Computing systems and networks***	***Computing systems and networks***	***Computing systems and networks***
Focus Area **(YR1 – 6 Teach Computing units)**	Technology	IT around us *(Year 2)* All units should begin with a brief recap of online safety expectations.	The Internet *(Year 4)* All units should begin with a brief recap of online safety expectations.	Systems and searching *(Year 5)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage	Privacy and security (P) Copyright and ownership (C)	Self-image and identity (S) Privacy and security (P) Online bullying (B)	Self-image and identity (S) Online relationships (F) Online bullying (B)	Self-image and identity (S) Online relationships (F) Online reputation (R)
Vocabulary	Screen Mouse Keyboard Equipment Buttons Paint	Information Technology (IT) Computer Barcode scanner/scan	Internet Network Router Security Network switch Server Wireless Access Point (WAP) Router Website Web page Web address Router Routing Route tracing Browser World Wide Web Content Links Files Download Sharing Ownership Permission Information Accurate Honest Adverts	System Connection Digital Input Process Output Protocol Address Packet Chat Slide deck Reuse Remix Collaboration
Equipment / Apps	**Equipment:**	**Equipment:** Laptops (keyboards and trackpads)	**Equipment:** Laptops	**Equipment:** Laptops

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Computing – Curriculum Progression Map

		Cameras, mobile devices, audio recording devices	**Apps, Software, Sites:** paintz.app	**Apps, Software, Sites:** https://padlet.com/	**Apps, Software, Sites:** https://padlet.com/ Google Slides
Substantive and disciplinary knowledge	1	Discuss how technology is used at school and at home	Lesson 1 What is IT? To recognise the uses and features of information technology • I can identify examples of computers • I can describe some uses of computers • I can identify that a computer is a part of IT	Lesson 1 Connecting networks To describe how networks physically connect to other networks • I can describe the internet as a network of networks • I can demonstrate how information is shared across the internet • I can discuss why a network needs protecting	Lesson 1 Systems To explain that computers can be connected together to form systems • I can explain that systems are built using a number of parts • I can describe that a computer system features inputs, processes, and outputs • I can explain that computer systems communicate with other devices
	2	Model and enable the use of real and imaginary technologies, including online tools	IT in school Identify the uses of information technology in the school • Identify examples of IT • Sort school IT by what it's used for • Identify that some IT can be used in more than one way	What is the internet made of? Recognise how networked devices make up the internet • Describe networked devices and how they connect • Explain that the internet is used to provide many services • Recognise that the World Wide Web contains websites and web pages	Computer systems and us Recognise the role of computer systems in our lives • Identify tasks that are managed by computer systems • Identify the human elements of a computer system

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Computing – Curriculum Progression Map

					• Explain the benefits of a given computer system
	3	Interact with computer systems using different inputs – e.g., by using a mouse, voice, speech or touch	IT in the world Identify information technology beyond school • Find examples of information technology • Sort IT by where it is found • Talk about uses of information technology	Sharing information Outline how websites can be shared via the World Wide Web (WWW) • Describe where websites are stored when uploaded to the WWW • Describe how to access websites on the WWW • Explain the types of media that can be shared on the WWW	Searching the web Experiment with search engines • Make use of a web search to find specific information • Refine my web search • Compare results from different search engines
	4	Use a range of devices such as cameras, mobile devices, audio recording devices	The benefits of IT Explain how information technology helps us • Recognise common types of technology • Demonstrate how IT devices work together • Say why we use IT	What is a website? Describe how content can be added and accessed on the World Wide Web (WWW) • Explain what media can be found on websites • Recognise that I can add content to the WWW • Explain that internet services can be used to create content online	Selecting search results Describe how search engines select results • Explain why we need tools to find things online • Recognise the role of web crawlers in creating an index • Relate a search term to the search engine's index

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Computing – Curriculum Progression Map

	5	Use a keyboard to copy or write a title or caption for work	Using IT safely Explain how to use information technology safely • List different uses of information technology • Talk about different rules for using IT • Say how rules can help keep me safe	Who owns the web? Recognise how the content of the WWW is created by people • Explain that websites and their content are created by people • Suggest who owns the content on websites • I can explain that there are rules to protect content	How search results are ranked Explain how search results are ranked • Order a list by rank • Explain that a search engine follows rules to rank results • Give examples of criteria used by search engines to rank results
	6	Explore changing the colour or font of a title or caption typed on the computer	Using IT in different ways Recognise that choices are made when using information technology • Identify the choices that I make when using IT • Use IT for different types of activities • Explain the need to use IT in different ways	Can I believe what I read? Evaluate the consequences of unreliable content • Explain that not everything on the World Wide Web is true • Explain why some information I find online may not be honest, accurate, or legal • Explain why I need to think carefully before I share or reshare content	How are searches influenced Recognise why the order of results is important, and to whom • Describe some of the ways that search results can be influenced • Recognise some of the limitations of search engines • Explain how search engines make money
Cycle B Term 2		**Lights, Camera, Action!**		**Ancient Achievers!**	**All fired up and ready to go**
		EYFS	**YR1** / **YR2**	**YR3** / **YR4**	**YR5** / **YR6**
End points		**Explore computer applications and technologies.**	**Use a computer to write.**	**Add content to a desktop publishing publication.**	**Create a vector drawing by combining shapes.**

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Computing – Curriculum Progression Map

Key Concepts		*Creating Media*	*Creating Media*	*Creating Media*	*Creating Media*
Focus Area **(YR1 – 6 Teach Computing units)**		Digital Literacy	Digital Writing *(Year 1)* All units should begin with a brief recap of online safety expectations.	Desktop Publishing *(Year 3)* All units should begin with a brief recap of online safety expectations.	Introduction to vector graphics *(Year 5)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage		Privacy and security (P) Copyright and ownership (C)	Self-image and identity (S) Privacy and security (P) Online bullying (B)	Self-image and identity (S) Online relationships (F) Online bullying (B)	Self-image and identity (S) Online relationships (F) Online reputation (R)
Vocabulary		Collect Count Organise Sort Compare Set	Word processor Keyboard Keys Letters Microsoft Word Google Docs Numbers Space Backspace Text cursor Capital letters Toolbar Bold Italic Underline Font Undo	Text Images Communicate Font Style Template Landscape Portrait Orientation Placeholder Desktop publishing Copy Paste Layout	Vector Drawing tools Shapes Object Icons Toolbar Vector drawing Move Resize Rotate Duplicate/copy Zoom Select Rotate Alignment grid
Equipment / Apps		**Equipment:** Laptops (keyboards and trackpads) **Apps, Software, Sites:** 2Simple	**Equipment:** Laptops **Apps, Software, Sites:** Microsoft Office Suite or Google Drive, Docs etc.	**Equipment:** Laptops **Apps, Software, Sites:** Adobe Spark or Canva or MS Publisher	**Equipment:** Laptops **Apps, Software, Sites:** Google Drawings
Substantive and disciplinary knowledge	1	Play with imaginary technologies in role-play	Exploring the keyboard Use a computer to write • Open a word processor • Recognise keys on a keyboard • Identify and find keys on a keyboard	Words and pictures Recognise how text and images convey information • Explain the difference between text and images • Recognise that text and images can communicate messages clearly	The drawing tools Identify that drawing tools can be used to produce different outcomes • Recognise that vector drawings are made using shapes

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Computing – Curriculum Progression Map

				• Identify the advantages and disadvantages of using text and images	• Experiment with the shape and line tools • Discuss how vector drawings are different from paper-based drawings
	2	Explore a range of computer applications, e.g., drawing apps, age-appropriate games etc.,	Adding and removing text Add and remove text on a computer • Enter text into a computer • Use letter, number, and space keys • Use backspace to remove text	Can you edit it? Recognise that text and layout can be edited • Change font style, size, and colours for a given purpose • Edit text • Explain that text can be changed to communicate more clearly	Creating images Create a vector drawing by combining shapes • Identify the shapes used to make a vector drawing • Explain that each element added to a vector drawing is an object • Move, resize, and rotate objects I have duplicated
	3	Model using web pages to find things out	Exploring the toolbar Identify that the look of text can be changed on a computer • Type capital letters • Explain what the keys that I have learnt about already do • Identify the toolbar and use bold, italic, and underline	Great template! Choose appropriate page settings • Define the term 'page orientation' • Recognise placeholders and say why they are important • Create a template for a particular purpose	Making effective drawings Use tools to achieve a desired effect • Use the zoom tool to help me add detail to my drawings • Explain how alignment grids and resize handles can be used to improve consistency • Modify objects to create a new image

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Computing – Curriculum Progression Map

	4	Follow shortcuts, favourites or weblinks to explore simple websites	Making changes to text Make careful choices when changing text • Select a word by double-clicking • Select all of the text by clicking and dragging • Change the font	Can you add content? Add content to a desktop publishing publication • Choose the best locations for my content • Paste text and images to create a magazine cover • Make changes to content after I've added it	Layers and objects Recognise that vector drawings consist of layers • Identify that each added object creates a new layer in the drawing • Change the order of layers in a vector drawing • Use layering to create an image
	5	Use a camera to take photographs of your favourite toys in class	Explaining my choices Explain why I used the tools that I chose • Say what tool I used to change the text • Decide if my changes have improved my writing • I can use 'undo' to remove changes	Lay it out Consider how different layouts can suit different purposes • Identify different layouts • Match a layout to a purpose • Choose a suitable layout for a given purpose	Manipulating objects Group objects to make them easier to work with • Copy part of a drawing by duplicating several objects • Recognise when I need to group and ungroup objects • Reuse a group of objects to further develop my vector drawing
	6	Explore light and shadows through using torches	Pencil or keyboard Compare typing on a computer to writing on paper	Why desktop publishing? Consider the benefits of desktop publishing	Create a vector drawing Apply what I have learned about vector drawings

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Computing – Curriculum Progression Map

			• Make changes to text on a computer • Explain the differences between typing and writing • Say why I prefer typing or writing		• Identify the uses of desktop publishing in the real world • Say why desktop publishing might be helpful • Compare work made on desktop publishing to work created by hand	• Create a vector drawing for a specific purpose • Reflect on the skills I have used and why I have used them • Compare vector drawings to freehand paint drawings
Cycle B Term 3		**Superheroes!**			**Under the canopy**	**Frozen Kingdom**
		EYFS	**YR1**	**YR2**	**YR3** / **YR4**	**YR5** / **YR6**
End points		**Capture our work through the use of technology.**	**Create music for a purpose.**		**Change the composition of an image.**	**Construct a digital 3D model of a physical object.**
Key Concepts		***Creating Media***	***Creating Media***		***Creating Media***	***Creating Media***
Focus Area **(YR1 – 6 Teach Computing units)**		Digital Literacy	Digital Music *(Year 2)* All units should begin with a brief recap of online safety expectations.		Photo Editing *(Year 4)* All units should begin with a brief recap of online safety expectations.	3D Modelling *(Year 6)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage		Self-image and identity (S) Online relationships (F) Online reputation (R)	Online relationships (F) Health, well-being and lifestyle (H)		Online reputation (R) Managing online information (I)	Online bullying (B) Health, well-being and lifestyle (H) Copyright and ownership (C)
Vocabulary		Paint Sounds Pictures Words Images	Music Pattern Rhythm Pulse Tempo Pitch	Notes Instrument Open Edit	Image Edit Arrange Select Digital Crop Undo Save Search Copyright Composition Pixels Rotate	Recolour Magic wand Select Adjust Sharpen Brighten Fake Real Composite Cut Copy Paste Alter	2D 3D View Space Resize Rotate	Position Select Duplicate Dimensions Modify

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Computing – Curriculum Progression Map

			Flip Hue/saturation Sepia Illustrator Vignette Retouch Clone	Background Foreground Publication Original Font style Layer border	
Equipment / Apps		**Equipment:** iPads (cameras) **Apps, Software, Sites:**	**Equipment:** Laptops **Apps, Software, Sites:** musiclab.chromeexperiments.com/Song-Maker	**Equipment:** Laptops **Apps, Software, Sites:** paint.net (app)	**Equipment:** Laptops **Apps, Software, Sites:** Tinkercad – *set up class link*
Substantive and disciplinary knowledge	1	Tour the school photographing the various ICT equipment	How music makes us feel Say how music can make us feel • Identify simple differences in pieces of music • Describe music using adjectives • Say what I do and don't like about a piece of music	Changing digital images Explain that the composition of digital images can be changed • Improve an image by rotating it • Explain why I might crop an image • Use photo editing software to crop an image	Introduction to 3D modelling Recognise that you can work in three dimensions on a computer • Add 3D shapes to a project • View 3D shapes from different perspectives • Move 3D shapes relative to one another
	2	Encourage children to operate devices and equipment in school, sometimes with adult support	Rhythms and patterns Identify that there are patterns in music • Create a rhythm pattern • Play an instrument following a rhythm pattern • Explain that music is created and played by humans	Changing the composition of images Explain that colours can be changed in digital images • Explain that different colour effects make you think and feel different things	Modifying 3D objects Identify that digital 3D objects can be modified • Resize an object in three dimensions • Lift/lower 3D objects • Recolour a 3D object

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Computing – Curriculum Progression Map

				• Experiment with different colour effects • Explain why I chose certain colour effects	
	3	Encourage children to speculate about why things happen or how things work	How music can be used Experiment with sound using a computer • Connect images with sounds • Use a computer to experiment with pitch • Relate an idea to a piece of music	Changing images for different uses Explain how cloning can be used in photo editing • Add to the composition of an image by cloning • Identify how a photo edit can be improved • Remove parts of an image using cloning	Make your own name badge Recognise that objects can be combined in a 3D model • Rotate objects in three dimensions • Duplicate 3D objects • Group 3D objects
	4	Get the children to use recording devices to say something about themselves or express their ideas	Notes and tempo Use a computer to create a musical pattern • Identify that music is a sequence of notes • Explain how my music can be played in different ways • Refine my musical pattern on a computer	Retouching images Explain that images can be combined • Experiment with tools to select and copy part of an image • Use a range of tools to copy between images • Explain why photos might be edited	Making a desk tidy Create a 3D model for a given purpose • Accurately size 3D objects • Show that placeholders can create holes in 3D objects • Combine a number of 3D objects
	5	Model how to and support the saving and retrieval of children's work	Creating digital music	Fake images	Planning a 3D model

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Computing – Curriculum Progression Map

			Create music for a purpose • Create a rhythm which represents an animal I've chosen • Create my animal's rhythm on a computer • Add a sequence of notes to my rhythm	Combine images for a purpose • Describe the image I want to create • Choose suitable images for my project • Create a project that is a combination of other images	Plan my own 3D model • Analyse a 3D model • Choose objects to use in a 3D model • Combine objects in a design
	6	Share your work with an adult or peer in school. Share how you used a piece of technology	Reviewing and editing music Review and refine our computer work • Review my work • Explain how I changed my work • Listen to music and describe how it makes me feel	Making and evaluating a publication Evaluate how changes can improve an image • Review images against a given criteria • Use feedback to guide making changes • Combine text and my image to complete the project	Make your own 3D model Create my own digital 3D model • Construct a 3D model based on a design • Explain how my 3D model could be improved • Modify my 3D model to improve it
Cycle B Term 4		**The Enchanted Forest**		**Traders and Raiders**	**To Infinity and Beyond**
		EYFS	**YR1** / **YR2**	**YR3** / **YR4**	**YR5** / **YR6**
End points		**Use technology to create audio and images.**	**Select objects by attribute and make comparisons.**	**Use a digital device to collect data automatically.**	**Apply my knowledge of a database to ask and answer real-world questions.**
Key Concepts		**Computer systems and networks**	***Data and Information***	***Data and Information***	***Data and Information***
Focus Area **(YR1 – 6 Teach Computing units)**		Audio	Pictograms *(Year 2)* All units should begin with a brief recap of online safety expectations.	**Data Logging** ***(Year 4)*** *– Replace with 'Branching Databases' if no access to data loggers* All units should begin with a brief recap of online safety expectations.	Flat-File Databases *(Year 5)* All units should begin with a brief recap of online safety expectations.

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Computing – Curriculum Progression Map

Project Evolve Coverage		Self-image and identity (S) Online relationships (F) Online reputation (R)	Online relationships (F) Health, well-being and lifestyle (H)	Online reputation (R) Managing online information (I)	Online bullying (B) Health, well-being and lifestyle (H) Copyright and ownership (C)
Vocabulary		Equipment Buttons Paint Sounds Compare Set	Organise Data Object Tally Chart Votes Total Pictogram Compare Count More than Less than Explain Most common Least common Attribute Block diagram	Data Table (layout) Input device Sensor Data logger Logging Data point Interval Analyse Data set Import Export Logged Collection Review Conclusion	Database Data Information Record Field Sort Order Group Field Record Search Criteria Graph Chart Axis Compare filter presentation
Equipment / Apps		**Equipment:** Laptops, iPads, stereo, audio CDs.	**Equipment:** Laptops **Apps, Software, Sites:** *https://www.j2e.com/jit5#pictogram*	**Equipment:** Data Loggers ***(currently not in school)***	**Equipment:** Laptops **Apps, Software, Sites:** Google Sheets or MS Excel
Substantive and disciplinary knowledge	1	Listen to stories, music, watch animations using digital devices	Counting and comparing Recognise that we can count and compare objects using tally charts • Record data in a tally chart • Represent a tally count as a total • Compare totals in a tally chart	Answering questions Explain that data gathered over time can be used to answer questions • Choose a data set to answer a given question • Suggest questions that can be answered using a given data set • Identify data that can be gathered over time	Creating a paper-based database Use a form to record information • Create a database using cards • Explain how information can be recorded • Order, sort, and group my data cards
	2	Ask the children to choose a website appropriate for an activity	Enter the data Recognise that objects can be represented as pictures	Data collection Use a digital device to collect data automatically	Computer databases Compare paper and computer-based databases

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Computing – Curriculum Progression Map

			• Enter data onto a computer • Use a computer to view data in a different format • Use pictograms to answer simple questions about objects	• Explain what data can be collected using sensors • Use data from a sensor to answer a given question • Identify that data from sensors can be recorded	• Explain what a field and a record is in a database • Navigate a flat-file database to compare different views of information • Choose which field to sort data by to answer a given question
	3	Ask the children to match images to a sound	Creating pictograms Create a pictogram • Organise data in a tally chart • Use a tally chart to create a pictogram • Explain what the pictogram shows	Logging Explain that a data logger collects 'data points' from sensors over time • Recognise that a data logger collects data at given points • Identify the intervals used to collect data • Talk about the data that I have captured	Using a database Outline how you can answer questions by grouping and then sorting data • Explain that data can be grouped using chosen values • Group information using a database • Combine grouping and sorting to answer specific questions
	4	Supervise the children choosing appropriate images for a specific purpose (e.g., images of trains)	What is an attribute? Select objects by attribute and make comparisons • Tally objects using a common attribute • Create a pictogram to arrange objects by an attribute	Analysing data Recognise how a computer can help us analyse data • View data at different levels of detail • Sort data to find information	Using search tools Explain that tools can be used to select specific data • Choose which field and value are required to answer a given question

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Computing – Curriculum Progression Map

			• Answer 'more than'/'less than' and 'most/least' questions about an attribute	• Explain that there are different ways to view data	• Outline how 'AND' and 'OR' can be used to refine data selection • Choose multiple criteria to answer a given question
	5	Provide opportunities for children to share their work online (e.g., upload to a website)	Comparing people Recognise that people can be described by attributes • Choose a suitable attribute to compare people • Collect the data I need • Create a pictogram and draw conclusions from it	Data for answers Identify the data needed to answer questions • Propose a question that can be answered using logged data • Plan how to collect data using a data logger • Use a data logger to collect data	Comparing data visually Explain that computer programs can be used to compare data visually • Select an appropriate chart to visually compare data • Refine a chart by selecting a particular filter • Explain the benefits of using a computer to create charts
	6	Provide opportunities for children to represent/express ideas & feelings using technology	Presenting information Explain that we can present information using a computer • Use a computer program to present information in different ways • Share what I have found out using a computer	Answering my question Use data from sensors to answer questions • Interpret data that has been collected using a data logger • Draw conclusions from the data that I have collected • Explain the benefits of using a data logger	Databases in real life Use a real-world database to answer questions • Ask questions that will need more than one field to answer • Refine a search in a real-world context • Present my findings to a group

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Computing – Curriculum Progression Map

			• Give simple examples of why information should not be shared						
Cycle B Term 5		**Towers, Tunnels and Turrets**			**Let's Grow!**		**Footsteps through time**		
		EYFS	**YR1**	**YR2**	**YR3**	**YR4**	**YR5**	**YR6**	
End points		**Plan a simple program.**	**Use my algorithm to create a program.**		**Design and create a maze-based challenge.**		**Create a controllable system that includes selection.**		
Key Concepts		***Programming***	***Programming B***		***Programming B***		***Programming A***		
Focus Area **(YR1 – 6 Teach Computing units)**		Computing	Programming animations *(Year 1)* All units should begin with a brief recap of online safety expectations.		Events and Actions in programs *(Year 3)* All units should begin with a brief recap of online safety expectations.		**Selection in Physical Computing *(Year 5)*** *Replace with 'Variables in Games' if no access to data loggers* All units should begin with a brief recap of online safety expectations.		
Project Evolve Coverage		Online bullying (B) Managing online information (I). Health, well-being and lifestyle (H)	Online reputation (R) Managing online information (I) Copyright and ownership (C)		Health, well-being and lifestyle (H) Privacy and security (P) Copyright and ownership (C)		Managing online information (I)		
Vocabulary		Technology Share Create Internet Mechanical toy Wind up toy Programmable Toy	ScratchJr Bee-Bot Command Sprite Compare Programming Block Joining Start block Run	Program Background Delete Reset Algorithm Predict Effect Change Value instructions	Motion Sprite Event Algorithm Logic Move Resize Extension block Pen up	Set up Action Pen Design Debugging Errors Setup Code Test	Microcontroller Components LED Program Repetition Infinite loop Output devices Count-controlled loop Switch	Condition True False Input Selection Action debug	
Equipment / Apps		**Equipment:** Laptops	**Equipment:** Laptops **Apps, Software, Sites:** ScratchJr		**Equipment:** Laptops **Apps, Software, Sites:** Scratch 3		**Equipment:** Laptops **Apps, Software, Sites:**		

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Computing – Curriculum Progression Map

					Crumbles ***currently not in school – request from hub in advance***
Substantive and disciplinary knowledge	1	Play Simon Says (algorithms/debugging) Take a simple 'problem' and split it into smaller steps – E.g., to dress a teddy (computational thinking - decomposition)	Comparing tools Choose a command for a given purpose • Find which commands to move a sprite • Use commands to move a sprite • Compare different programming tools	Moving a sprite Explain how a sprite moves in an existing project • Explain the relationship between an event and an action • Choose which keys to use for actions and explain my choices • Identify a way to improve a program	Connecting Crumbles Control a simple circuit connected to a computer • Create a simple circuit and connect it to a microcontroller • Program a microcontroller to make an LED switch on • Explain what an infinite loop does
	2	Ask the children to 'program' each other to find hidden objects (programming)	Joining blocks Show that a series of commands can be joined together • Use more than one block by joining them together • Use a Start block in a program • Run my program	Maze movement Create a program to move a sprite in four directions • Choose a character for my project • Choose a suitable size for a character in a maze • Program movement	Combining output components Write a program that includes count-controlled loops • Connect more than one output component to a microcontroller • Use a count-controlled loop to control outputs • Design sequences that use count-controlled loops
	3	Ask the children to come up with a set of instructions (pictures of arrows) to navigate a partner around a	Make a change Identify the effect of changing a value	Drawing lines Adapt a program to a new context	Controlling with conditions

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Computing – Curriculum Progression Map

		simple obstacle course in PE (algorithms)	• Find blocks that have numbers • Change the value • Say what happens when I change a value	• Use a programming extension • Consider the real world when making design choices • Choose blocks to set up my program	Explain that a loop can stop when a condition is met • Explain that a condition is either true or false • Design a conditional loop • Program a microcontroller to respond to an input
	4	Listen to and follow recorded instructions	Adding sprites Explain that each sprite has its own instructions • Show that a project can include more than one sprite • Delete a sprite • Add blocks to each of my sprites	Adding features Develop my program by adding features • Identify additional features (from a given set of blocks) • Choose suitable keys to turn on additional features • Build more sequences of commands to make my design work	Starting with selection Explain that a loop can be used to repeatedly check whether a condition has been met • Explain that a condition being met can start an action • Identify a condition and an action in my project • Use selection (an 'if…then…' statement) to direct the flow of a program
	5	Record instructions for friends (programming)	Project design Design the parts of a project • Choose appropriate artwork for my project • Decide how each sprite will move	Debugging movement Identify and fix bugs in a program • Test a program against a given design • Match a piece of code to an outcome	Drawing designs Design a physical project that includes selection • Identify a real-world example of a condition starting an action

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Computing – Curriculum Progression Map

			• Create an algorithm for each sprite	• Modify a program using a design	• Describe what my project will do • Create a detailed drawing of my project
	6	Explore playing with programmable toys (e.g., Bee bots, remote controlled cars etc.) (programming)	Following my design Use my algorithm to create a program • Use sprites that match my design • Add programming blocks based on my algorithm • Test the programs I have created	Making a project Design and create a maze-based challenge • Make design choices and justify them • Implement my design • Evaluate my project	Writing and testing algorithms Create a program that controls a physical computing project • Write an algorithm that describes what my model will do • Use selection to produce an intended outcome • Test and debug my project
Cycle B Term 6		**Countryside Connections (Whole School topic)**			
		EYFS	**YR1** / **YR2**	**YR3** / **YR4**	**YR5** / **YR6**
End points		**Explain that a sequence of commands has a start and an outcome.**	**Design and create a program using my own design.**	**Design and create a project that includes repetition.**	**Design and create a program which uses selection.**
Key Concepts		***Programming***	***Programming B***	***Programming B***	***Programming B***
Focus Area **(YR1 – 6 Teach Computing units)**		Algorithms	Programming Quizzes *(Year 2)* All units should begin with a brief recap of online safety expectations.	Repetition in Games *(Year 4)* All units should begin with a brief recap of online safety expectations.	Selection in Quizzes *(Year 6)* All units should begin with a brief recap of online safety expectations.
Project Evolve Coverage		Online bullying (B) Managing online information (I). Health, well-being and lifestyle (H)	Online reputation (R) Managing online information (I) Copyright and ownership (C)	Health, well-being and lifestyle (H) Privacy and security (P) Copyright and ownership (C)	Managing online information (I)
Vocabulary		Choices Create	Sequence Algorithm	Scratch Infinite loop	Selection Debug

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Computing – Curriculum Progression Map

		Internet Website Technology Share Internet Mechanical toy Wind-up toy Programmable Toy		Command Program Run Start Outcome Predict Blocks Sprite Design Actions Project Modify Debug		Programming Sprite Blocks Code Loop Repeat Value Block Repeat Forever Count-controlled loop Costume Repetition Animate Event block Duplicate Modify Algorithm Debug Refine		Condition True False Count-controlled Loop Outcomes Conditional statement Algorithm Program Answer Task Input Implement Test Run condition
Equipment / Apps		**Equipment:** Laptops		**Equipment:** Laptops **Apps, Software, Sites:** ScratchJr		**Equipment:** Laptops **Apps, Software, Sites:** Scratch 3		**Equipment:** Laptops **Apps, Software, Sites:** Scratch 3	
Substantive and disciplinary knowledge	1	If you have them, show the children the cables that connect computers to the school network (networks)		ScratchJr recap Explain that a sequence of commands has a start • Identify the start of a sequence • Identify that a program needs to be started • Show how to run my program		Using loops to create shapes Develop the use of count-controlled loops in a different programming environment • List an everyday task as a set of instructions including repetition • Predict the outcome of a snippet of code • I can modify a snippet of code to create a given outcome		Exploring conditions Explain how selection is used in computer programs • Recall how conditions are used in selection • Identify conditions in a program • Modify a condition in a program	
	2	Draw or give simple instructions to a partner to build a simple structure using building blocks (programming)		Outcomes Explain that a sequence of commands has an outcome		Different loops Explain that in programming there are infinite loops and count controlled loops		Selecting outcomes Relate that a conditional statement connects a condition to an outcome	

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Computing – Curriculum Progression Map

			• Predict the outcome of a sequence of commands • Match two sequences with the same outcome • Change the outcome of a sequence of commands	• Modify loops to produce a given outcome • Choose when to use a count-controlled and an infinite loop • Recognise that some programming languages enable more than one process to be run at once	• Use selection in an infinite loop to check a condition • Identify the condition and outcomes in an 'if... then… else...' statement • Create a program with different outcomes using selection
	3	Encourage the children to understand that operations can be predicted and have a cause and effect (e.g. press a button turns on/off) Encourage the children to develop an understanding that an operation has a predictable result (e.g. clicking a mouse selects an object) (predicting algorithms)	Using a design Create a program using a given design • Work out the actions of a sprite in an algorithm • Decide which blocks to use to meet the design • Build the sequences of blocks I need	Animate your name Develop a design that includes two or more loops which run at the same time • Choose which action will be repeated for each object • Explain what the outcome of the repeated action should be • Evaluate the effectiveness of the repeated sequences used in my program	Asking questions Explain how selection directs the flow of a program • Explain that program flow can branch according to a condition • Design the flow of a program which contains 'if… then… else…' • Show that a condition can direct program flow in one of two ways
	4	Look at a set of drawn instructions (e.g. arrows) and predict what will happen if they were entered into a programmable toy (predicting algorithms) Invite the children to point out simple errors in images or texts (debugging)	Changing a design Change a given design • Choose backgrounds for the design • Choose characters for the design	Modifying a game Modify an infinite loop in a given program • Identify which parts of a loop can be changed • Explain the effect of my changes • Re-use existing code snippets on new sprites	Planning a quiz Design a program which uses selection • Outline a given task • Use a design format to outline my project

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Computing – Curriculum Progression Map

			• Create a program based on the new design		• Identify the outcome of user input in an algorithm
	5	Ask the children to sequence a series of photographs to recount a story (algorithms)	Designing and creating a program Create a program using my own design • Choose the images for my own design • Create an algorithm • Build sequences of blocks to match my design	Designing a game Design a project that includes repetition • Evaluate the use of repetition in a project • Select key parts of a given project to use in my own design • Develop my own design explaining what my project will do	Testing a quiz Create a program which uses selection • Implement my algorithm to create the first section of my program • Test my program • Share my program with others
	6	Use simple software applications to make something happen (e.g., Bee Bot iPad app)	Lesson 6 Evaluating To decide how my project can be improved • I can compare my project to my design • I can improve my project by adding features • I can debug my program	Lesson 6 Creating our games To create a project that includes repetition • I can refine the algorithm in my design • I can build a program that follows my design • I can evaluate the steps I followed when building my project	Lesson 6 Evaluating a quiz To evaluate my program • I can identify ways the program could be improved • I can identify the setup code I need in my program • I can extend my program further