Barwic Parade Community Primary School
Computing Progression Grid

National Curriculum Content

Area	Key Stage 1 Aims	Key Stage 2 Aims
1. Computer Science (CS)	1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions 2. Create and debug simple programs 3. Use logical reasoning to predict the behaviour of simple programs	4. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 5. Use sequence, selection, and repetition in programs; work with variables and various forms of input and output 6. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs 7. Understand computer networks including the internet; how they can provide multiple services, such as the World Wide Web 8. Appreciate how [search] results are selected and ranked
2. Information Technology (IT)	1. Use technology purposefully to create, organise, store, manipulate and retrieve digital content	2. Use search technologies effectively 3. 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

3. Digital Literacy (DL)	1. Recognise common uses of information technology beyond school 2. 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	3. Understand the opportunities [networks] offer for communication and collaboration 4. Be discerning in evaluating digital content 5. Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

	EYFS	Key Stage One	Lower Key stage Two	Upper Key stage Two
1. Computer Science (CS)		<u>Year 1</u> <u>Introduce Programming</u> 1. Understand sequence and algorithms. 2. Sequence instructions (commands) to achieve an objective. 3. Predict, write, execute and debug a simple program. <u>Year 2</u> <u>Develop Programming</u> 1. Create and debug simple programs. 2. Use logical reasoning to predict the behaviour of simple programs. 3. Simplify a program by using a loop. <u>Programming with Scratch Jr</u> 1. Understand sequence and algorithms.	<u>Year 3</u> <u>Programming in Scratch</u> 1. Design, write and debug programs that accomplish specific goals. (Including outputs) 2. Use repetition in programs. 3. Work with various form of inputs; keyboard, mouse and touch screen. 4. Write programs to simulate physical systems. <u>Year 4</u> <u>Programming in Scratch</u> 1. Use sequence, selection, and repetition in programs. 2. Work with variables and various forms of input and output. 3. Debug programs that accomplish goals.	<u>Year 5</u> <u>Programming with Scratch (CS4 & 5)</u> 1. Program list variables that chooses randomly. 2. Program inputs, conditions and sensing for interaction, data variables for scoring and a game timer. 3. Program Inputs, outputs, loops, conditions, sensing and variables. <u>Text based programming (CS5)</u> 1. Change the variables of text-based commands. 2. Write text-based commands accurately. 3. Write text-based commands to program digital art. 4. Write text commands/functions to program keyboard inputs in a game.

		2. Sequence instructions (commands) to achieve an objective. 3. Predict, write, execute and debug a simple program.	4. Work with variables and conditions.	<u>Computer Networks and the Internet (CS7)</u> 1. Understand Computer Networks, Internet and Cloud Computing. 2. What is email and how can we use it safely? 3. Understand how and why we collaborate online (including blogging). <u>Year 6</u> <u>Programming in Scratch (CS4&5)</u> 1. Program inputs, conditions, random variables for unpredictability, game timer. 2. Program inputs, conditions, sensing, random variables, operators for direction and data variables for scoring. 3. Use inputs, conditions, loops, sensing, costume changes and broadcasts. 4. Work with multiple sprites to send broadcast messages between them. <u>Programming in Python (CS4 & 5)</u> 1. Program movements using Python Turtle. 2. Use the PRINT command for text. 3. Program a simple calculator in Python. 4. Program loops to repeat text. 5. Program interactive inputs.

				<u>HTML (CS4 & IT3)</u> 1. Add and align text and change colour. 2. Program background colour. 3. Add and align images. 4. Add hyperlinks and use them effectively to build navigation between different pages and external sites. 5. Add an iframe (such as a Google Map) and adjust the height and width. <u>Computers Past Present and Future (CS7 &8)</u> 1. Understand how technology has changed over time. Combine text and images to present ideas. 2. Understand the impact (positive/negative) technological changes have on society. 3. Predict how technology will change in the future.
2. Information Technology (IT)		<u>Year 1</u> <u>Digital Art (IT1)</u> 1. Change the colour of individual pixels to accurately re-create a basic artwork. 2. Make changes where required. 3. Change the colour of individual pixels to accurately re-create detailed artwork. <u>Design (IT1)</u> 1. Change the colour and pattern of elements.	<u>Year 3</u> <u>Comic Creation (IT3)</u> 1. Add, resize and organise colour or picture backgrounds 2. Add, resize, organise characters/objects to different panels. 3. Add narration using text and direct speech using speech bubbles. <u>Music Creation (IT3)</u> 1. Create ascending and	<u>Year 5</u> <u>App Design (IT3)</u> 1. Adjust slide size to mimic a phone/tablet size. 2. Add text and images to a slide. 3. Add icons and text to use as navigation. 4. Duplicate slides to create multiple pages of the app. 5. Create hyperlinks to create navigation.

		2. Position and rotate objects on a design. 3. Position objects in relation to each other. <u>Text and Images (IT1)</u> 1. Add, move and resize images the add text and adjust size and placement. 2. Add, resize and place images on a page then add and position text to label and describe images. 3. Use word banks to write sentences about images. <u>Comic Creation (IT1)</u> 1. Add a suitable background to a panel(s) 2. Use different controls to move around a comic and make space. E.g zoom, minimise menus. 3. Add, resize, move and rotate objects, including characters. 4. Add and resize text boxes and speech bubbles. <u>Music Creation (IT1)</u> 1. Create a rhythm using a pattern of beats. 2. Create digital sounds using patterns and shapes. 3. Create a simple melody using patterns and adjust tempo.	descending scales. 2. Add chords evenly across the scales. 3. Add arpeggios and melodies. 4. Add a steady and even rhythm. 5. Use sampled sounds to create an effective mix. 6. Build beats, melody (tones) and effects. <u>Document Editing and Creation (IT3)</u> 1. Copy and Paste text and images. 2. Find and replace words. 3. Format text for a purpose. <u>Digital Art (IT3)</u> 1. Use various lines and fill tools plus copy/paste and rotation to create pattern effects. 2. Use shapes, fill, copy/paste, zoom and flip to create reflective symmetry effects. 3. Use stamps, copy/paste, layers and multiple frames to create animated GIF computer graphics. <u>Game Creation (Non-Coding) (IT3)</u> 1. Design, add and animate backgrounds 2. Design and add characters/objects. 3. Design and add platforms. <u>3D Design (IT3)</u>	<u>Ebook Creation (IT3)</u> 1. Add page colour and style then position and format text. 2. Add and position images from camera/internet. 3. Add audio, including hiding it behind an object. 4. Add hyperlinks to text and images. 5. Add and format shapes. 6. Use hyperlinks for navigation. <u>Data Handling (IT3)</u> 1. Select and use non-adjacent cells plus resize multiple cell widths and copy/paste cells. 2. Use formulae to find totals, averages and maximum/minimum numbers. 3. Select the correct chart type to present data. 4. Answer 'what if?...' questions. <u>Music Creation (IT3)</u> 1. Layer tracks using sounds and effects. 2. Create effective instrument tracks. 3. Edit tracks and effectively adjust volume and add effects. 4. Build a song using Live Loops.

		Year 2 Digital Art (IT1) 1. Use lines and fill tools to make interesting patterns. 2. Add a variety of shapes (outlines and fill) and label them with text. 3. Re-create graphics using pixels with different colours. Introduction to Animation (IT1) 1. Add a background and objects to a frame. 2. Copy/clone a frame and move objects to create an animation. 3. Create screen-recording animation. 4. Create stop-motion animation with photos. Introduce Data Handling (IT1) 1. Understand what data is and collect it as a tally. 2. Label a pictogram and add data to each column. 3. Edit a table with correct titles and numbers. 4. Create a bar chart/pie chart/line chart suitable for the data. 5. Interpret a pictogram/bar chart/line chart. Ebook Creation (IT1) 1. Add a book cover with title, author, colour and image. 2. Add multiple pages based on a theme.	1. Understand and use 3D space on a grid. 2. Re-create or design familiar 3D models using cubes, such as tables and chairs. 3. Use chisel tool to improve and adapt models. 4. Colour individual blocks or whole models. Year 4 Animation (IT3) 1. Create a stop-motion video by duplicating slides (frames). 2. Create animation using transition effects (motion paths, pulse etc). 3. Animate individual elements of objects. 4. Create animated GIF files by animating pixels. 3D Design (IT3) 1. Understand 3D 6pecial awareness. Add 3D shapes, resize, adjust height, duplicate and use the different perspective. 2. Re-create different types of buildings using 3D shapes. 3. Create roads/paths by adjusting the height of 3D shapes. 4. Add windows and door shapes. Internet Research (IT2, CS7 & 8) 1. Use search technologies to find	Year 6 Graphic Design (IT3) 1. Add, adjust and fill shapes. 2. Group shapes to improve accuracy and speed. 3. Add and customise gradient effects. 4. Adjust transparency/opacity for a purpose. 5. Use a colour picker correctly. Accurately rotate shapes. Image Editing (IT3) 1. Take and crop a screenshot and understand ratios. 2. Adjust the colours, brightness, contrast and filters. 3. Add drawing and text layers. 4. Import new images as layers and resize/add effects. 5. Save finished image to use in other projects. Virtual Reality (IT3, CS7) 1. Understand what virtual reality is and how it can be used to help people. 2. Add, move and resize objects in a virtual reality environment. 3. Animate objects for realism. 4. Use code blocks to add movement (with grouping) and interactions (conditions). 5. Create multiple scenes of VR environments.

		3. Add text on different pages. 4. Add images on different pages to match the theme/text. 5. Add voice recordings to match the text and theme.	specific pieces of information. 2. Understand features of an Internet Browser. 3. Reference the correct source of information. 4. Be discerning in evaluating digital content. 5. Check the internet for fake news by cross-referencing facts. <u>Video Editing (IT3)</u> 1. Add clips then order and resize them. 2. Add titles to clips and change themes. 3. Add voiceovers and music. 4. Add filters to clips. 5. Export a project. <u>Data Handling (IT3)</u> 1. Find and present data as a table and suitable chart. 2. Give chart a suitable title and label axis correctly. <u>Ebook Creation (IT3)</u> 1. Add page colour and style then position and format text. 2. Add and position images from camera/internet. 3. Add audio, including hiding it behind an object. 4. Add hyperlinks to text and images.	<u>Web Design (IT3)</u> 1. Add and format text within a website. 2. Organise sections of web-pages and multiple page with relevant titles. 3. Add and edit images. 4. Include other features such as hyperlinks, buttons and files. 5. Evaluate other websites and provide constructive feedback. 6. Make necessary changes to the website based on feedback.

			5. Add and format shapes. Use hyperlinks for navigation.	
4. Digital Literacy (DL)		<u>Year 1</u> <u>E-Safety</u> 1. Keep personal information private. (Resource 1) 2. Why do websites want personal information. (Resource 2) 3. Identify when and where to go for help when concerned. (Resource 3) <u>Year 2</u> <u>E-Safety</u> 1. What are the dangers of sharing photos online? 2. People are not always who they say they are online. 3. Trusting information online. 4. Using the Internet responsibly. 5. Being respectful.	<u>Year 3/4</u> <u>E Safety</u> 1. Keep personal information private 2. Respect and protect again online bullies 3. Understand the consequences of sharing photo/videos online 4. Understand the term digital footprint 5. How can we check online content is trustworthy? 6. How and where and who can we report concerns we have to?	<u>Year 5/6</u> <u>E-Safety</u> 1. Keep personal information private 2. Respect and protect again online bullies 3. Understand the consequences of sharing photo/videos online 4. Understand the term digital footprint 5. How can we check online content is trustworthy? 6. How and where and who can we report concerns we have to?
APPs/programmes		Websites: Links to online resources https://www.ilearn2.co.uk/teachers.html Scratch Jr (programming) Puppet Pals (Animation) I Can Animate (Animation)	Websites: Links to online resources https://www.ilearn2.co.uk/teachers.html	Websites: Links to online resources https://www.ilearn2.co.uk/teachers.html
Vocabulary		<u>Year 1</u> Use directional language. Algorithm.	<u>Year 3</u> Blogging. Wiki.	

		Coding. Conditional language ‘if’ ‘when’. Hyperlink. Browser. Database. eBook. <u>Year 2</u> Message. Email. Internet. World Wide Web. Mnemonic. Podcast. Data. Algorithm. Debugging. Sequencing. Infographic. eBook. Program. Code. Sprite. QR code. Stop motion.	eBook. Mind map.	

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