

Computing – Progression Map



	2-Year-Olds/ Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science - unplugged	n/a	n/a	Understand what algorithms are. Understand that algorithms are implemented as programs on digital devices.	Understand what algorithms are. Understand that algorithms are implemented as programs on digital devices.	Solve problems by decomposing them into smaller parts Use logical reasoning to explain how some simple algorithms work.	Solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work.	Solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work. Detect and correct errors in algorithms and programs. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.	Solve problems by decomposing them into smaller parts. Use logical reasoning to explain how some simple algorithms work. Detect and correct errors in algorithms and programs. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.
Computer Science – Coding & Programming	n/a	n/a	Understand that programs execute by following precise and unambiguous instructions. Create simple programs. Debug simple programs.	Understand that programs execute by following precise and unambiguous instructions. Create simple programs. Debug simple programs.	Detect and correct errors in algorithms and programs. Design, write and debug programs that accomplish specific goals, including controlling or simulating physical	Detect and correct errors in algorithms and programs. Design, write and debug programs that accomplish specific goals, including controlling or	Use sequence, selection and repetition in programs. Work with variables. Work with various forms of input and output.	Use sequence, selection and repetition in programs. Work with variables. Work with various forms of input and output.

				Use logical reasoning to predict the behaviour of own programs.	systems. Use sequence, selection and repetition in programs Work with variables. Work with various forms of input and output.	simulating physical systems. Use sequence, selection and repetition in programs. Work with variables. Work with various forms of input and Output.		
Computer Science - Skills	n/a	n/a	I can physically follow instructions. I can give others instructions to move around. I can predict outcomes from sequences. I can begin to identify an algorithm to achieve a specific purpose. I can create an algorithm to execute a program on a digital device. I am beginning to predict what will happen for a short sequence of instructions in a program. I am beginning to use software to create movement	I can physically follow instructions including turns (right angle). I can create an algorithm for a specific purpose. I can sequence and programme a digital device specifying distance and turns and drawing a trail. I can predict what will happen and test results. I can use software to create movement and patterns on a screen. I can talk about similarities and differences between physical	I can plan and enter a sequence of instructions on a robot/sprite to achieve specific outcomes. I can test and improve/debug programmed sequences. I can use loops (repeat/forever) to achieve solutions to tasks I can use computational thinking to solve open-ended problems. I can talk about algorithms planned by others and identify any problems and the expected outcome. I can explain how algorithms work, predicting	I can plan and enter a sequence of instructions on a robot/sprite to achieve specific outcomes. I can test and improve/debug programmed sequences. I can use broadcast/receive to link sprites and stage I can use selection (if-else) blocks to give different outcomes. I can use an algorithm to sequence and order more complex programming. I can explain how algorithms work, predicting outcomes and debugging.	Explore/ refine procedures using repeat to achieve solutions to problems. Explore instructions to control software or hardware with an input using 'if then' commands. Explore a simulation to then control a physical system using inputs and different outputs. Identify problems and identify a solution for a program. Write down the steps required to achieve the outcome that is wanted and refer to this when programming.	Record in some detail the steps that are required to achieve an outcome. Predict the outputs for the steps in an algorithm. Use the process: plan, program, test and review a program. Write a program that follows an algorithm to solve a problem and achieve a planned outcome. Group commands as a procedure to achieve a specific

			and patterns on a screen. I can use Computer Science vocabulary accurately.	devices and onscreen robots. I can use the word debug to correct any mistakes and explain what I have done. I can experience a range of control devices such as a microscope, sound recorders, cameras, and other devices.	outcomes and debugging.	I can create and edit procedures using commands such as pen up, pen down and change direction.	Predict the outputs for the steps in an algorithm. Use the process: plan, program, test and review. Write a program that follows an algorithm to solve a problem for a digital device. Group commands as a procedure to achieve a specific outcome within a program. Understand how sensors can be used to measure input to activate a procedure or sequence and talk about applications in society.	outcome within a program. Control on-screen mimics and physical devices using one or more input and predict the outputs. Understand how sensors can be used to measure input to activate a procedure or sequence and talk about applications in society.
Vocabulary			• Instructions • Algorithm • Predict • Sequence • Execute • Program • Digital device • Software	• Specific purpose • Physical device • Onscreen robot • debug	• Sprite • Test • Loops • Repeat/forever • Computational thinking • Outcome	• Broadcast • Receive • Selection • If/else • Complex programming • Procedures • Commands	• Repeat • Input • If/then • Simulation • Physical system • Review	
Digital Literacy - Skills	n/a	n/a	I can access a website and navigate around it. I can recognise how I use technology in my	I can use a search engine to find information using agreed keywords. I can navigate to a website by	I can use an age-appropriate search engine independently. I understand plagiarism when	I can use an internet search to answer questions on a topic and know there are different search engines available	Use the internet as a tool for research Choose the most appropriate search engine for the task, refining as necessary	I can explain the differences between a network, the internet and the world wide web

			home and at school. I am beginning to evaluate websites by giving opinions. I know strategies if I see something inappropriate on a website and/or digital device. I understand that passwords should be kept private. I know that online communication is not always true. I own my work by adding my name and data. I respect the work of others stored on a shared drive (online). I can publish my work online.	entering a simple web address. I know about the risks of advertising or pop-up windows. I understand that some information online may be untrue. I can keep my password secret. I can contribute to online class blogs. I understand the need to be respectful online. I know that I need to check the information before uploading.	using copy/paste from a webpage. I know the difference between fact, fiction and opinion online. I can explore and discuss the benefits of a range of online communication tools. I know how to respond to unpleasant communications . I understand the need to keep personal information private and am responsible in my online presence. I can create and use a basic email service. I know the difference between personal, private and public online spaces and the risks associated with these. I understand that there are rules about using public	I can use different search engines and their features, e.g., Google Image Search, video, sound etc. I can understand copyright issues – what images/videos / sounds are legal and safe to use. I know that websites are not always accurate, and that information should be checked before it is used. I understand some of the risks and rewards involved in publishing online and know how to keep safe. I can recognise the effect that their writing or images may have on others and respect the ideas and communications of others/ they encounter online. I know that I need to have the appropriate permission for use of images.	Recognise reasons that people might publish inaccurate content and check validity. Identify and ignore/cancel unwanted advertising and malicious downloads in the form of, popups, video, banners, hyperlinked objects. Identify whether a file has copyright or can be legally downloaded and whether these can be used in their own work. Discuss the differences between an open blog and a forum for a closed community. Understand that you should not publish other peoples' material without their permission. I can explain in simple terms the differences between a network, the internet and the world wide web.	Decide which online communication tool to use to best suit the purpose. I know that computers use IP addresses to identify each other. I use specific vocabulary: server, digital data, binary code, URL. I can explain how search engines work, finding and ranking pages in order. I can use a range of sources to check the validity and recognise different viewpoints. Describe the possible impact of published content to an audience e.g., the use of advertising. Know the meaning of some common website
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					spaces online.			extensions – such as .com.
Vocabulary			• Website • Navigate • Technology • Evaluate • Inappropriate • Passwords • Online communication • Data • Shared drive • Online • Publish	• Search engine • Key words • Web address • Pop up • Windows • Blogs • Uploading	• Age appropriate • Plagiarism • Copy/paste • Online presence • Email	• Copyright	• Validity • Malicious downloads • Popups • Banners • Hyperlinked objects • Open blog • Closed forum • Network • World wide web	• IP address • Server • Digital data • Binary code • URL • Ranking • Website extensions • https

Information Technology - Skills	n/a	n/a	I can create audio using digital instruments and recordings.	I can create audio using digital instruments and recordings.	I can create and insert music and sounds into presentations and documents.	I can add information and use the 'field' function within a database.	I can use 'AND', 'OR', '<=' and '>=' to search a database.	I can copy cells and formulae using copy & paste, and fill across and down.
			I can create/edit an image using a range of 'tools' both on and offline.	I can create/edit an image using a range of 'tools' both on and offline including 'undo' and 'redo'.	I can create and manipulate digital artwork.	I can sort record cards by using field names and use a database to find the answer to simple questions.	I can design questions to search a large database.	I can display and interpret data selecting bar charts, pie charts, scatter graphs and line graphs appropriately.
			I can use a keyboard effectively.	I can word process short pieces of text including the use of formatting tools.	I use reasoning about the quality and composition of images.	I can use the search tool find information and search for answers to simple questions.	I can check for accuracy by checking data, using different views, search tools and graphing.	I can match the information in a spreadsheet to the needs of the audience and present data, with appropriate ranges, labelling axes and title.
			I can use a word bank for help and use online spelling tools.	I am beginning to explain reasons why I have made choices to a teacher or talk partner.	I can perform basic editing on images/video – crop, recolour, resize.	I can use the search tool find information and search for answers to simple questions.	I can build and use databases to support my work.	I can enter formulae into a spreadsheet and modify the data, (simple calculations + -/ x total).
			I can add text to photographs and pictures.	I can save, print, retrieve and edit my work.	I can use numerous design features such as text boxes, borders and WordArt in different layouts and styles.	I can create simple bar charts and use them to answer questions.	I can enter formulae into a spreadsheet and modify the data, (simple calculations + -/ x total).	I can create and amend a spreadsheet to solve a problem through a review of the rules and variables.
			I am beginning to explain reasons why I have made choices to a teacher or talk partner.	I can find my work to open or print it.	I can use a variety of presentation software to make a sequence of slides.	I can use a branching database to identify objects and add additional objects to an existing branching database.	I can make predictions and changes and check results.	I can use 'SUM' to calculate the total of a set of numbers in a range of cells.
			I can save my work to the appropriate location.	I can use and add to a branching database to find objects using.	I can add to, sort, and search a database (including branching).	I can select colour, cell size and text appropriately.	I can create graphs and charts from data in a spreadsheet.	I can use databases and branching databases to process, interpret, store, and present information for
			I am beginning to retrieve my work.		I can interrogate a simple database to answer questions and	I can save and retrieve documents from		
			I can print work and pictures.					
			I can make a pictogram and understand what it					

			shows.		create charts from the data.	shared areas using sensible names.		a specific audience.
			I understand that technology can help to create and edit a range of document styles.		I can use spreadsheet cell references I can format cells and text appropriately. I can use a data logger to capture measurements over time.	I can use data loggers to capture information to use over time.	I can use spreadsheets to answer 'what if...?' questions and check predictions. I can investigate changes in sound, light and/or temperature levels using data logging, using continuous logging, snapshot functions and logging over time.	I can identify the need for accuracy and check the plausibility of the information I find online. I can identify opportunities to use data logging to support my work. I can use data logging devices to investigate changes in the environment over time. I can use graphical information to answer questions and solve simple problems.

Vocabulary			• Create • Audio • Edit • Image • Tools • Keyboard • Text • Save • Print • Pictogram • Document	• recordings • Undo • Redo • Word process • Format • Retrieve • Branching database • Collaborate	• insert • Sounds • Presentation • Crop • Recolour • Resize • Design features • Text box • Borders • Software • Sort • Search • Interrogate • Charts • Spreadsheet • Cell • Data logger	• function • Field • Record cards • Field names • Shared area	• AND • OR □ =< □ => • Formulae • SUM • Continuous logging • Snapshot functions	• Fill across • Fill down • Ranges • Labelling • Axes • Title • Variables • Process • Interpret data • Specific audience
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