Progression of Skills
In Computing

EYFS Skills	Nursery 2/3	Nursery 3/4	Reception	KS1 NC Skills	Year 1	Year 2	KS2 NC Skills	Year 3	Year 4	Year 5	Year 6
Citizenship (E-Safety)											
Understanding the World: Guide children to make sense of their physical world and their community.	Listen to ways adults explain how to keep them safe during day to day activities.	Begin to understand ways to help keep them safe while using digital technology.	Understand and describe ways to help keep them safe while using digital technology.	**Use technology safely and respectfully.**	Keep themselves safe while using digital technology.	Keep themselves safe and show respect to others while using digital technology.	**Use technology safely, respectfully and responsibly.**	Use digital technology safely and show respect for others when working online.	Demonstrate that they can act responsibly when using computers.	Demonstrate that they can act responsibly when using the internet.	Show that they can think through the consequences of their actions when using digital technology.
Understanding the World: Guide children to make sense of their physical world and their community.	Listen to/observe adults explaining/using the internet.	Begin to understand that the internet allows access to information.	Begin to understand that information on the internet can be seen by others.	**Keeping personal information private.**	Understand that information on the internet can be seen by others.	Understand that they should not share personal information online.	**Recognise acceptable/unacceptable behaviour.**	Recognise unacceptable behaviour when using digital technology.	Understand the difference between acceptable and unacceptable behaviours when using digital technology.	Discuss the consequences of particular behaviours when using digital technology.	Identify principles underpinning acceptable use of digital technologies.
Understanding the World: Guide children to make sense of their physical world and their community.	Start to understand that they should ask an adult before using digital devices.	Know that they should check with an adult before using digital devices.	Begin to understand what to do if they are worried/unsure about online content they see and be able to identify a trusted adult.	**Identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.**	The child can understand what to do if they see disturbing content online at home or at school.	The child can understand what to do if they have concerns about content or contact online.	**Know a range of ways to report concerns and inappropriate behaviour.**	Know who to talk to about concerns and inappropriate online behaviour in school.	Know who to talk to about concerns and inappropriate behaviour at home or in school.	Know how to report concerns and inappropriate behaviour in a range of contexts.	Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts.
							Be discerning in evaluating digital content.	Can decide whether a web page is relevant for a given purpose or question.	Can decide whether digital content is relevant for a given purpose or question.	Can decide whether digital content is reliable and unbiased.	Can form an opinion about the effectiveness of digital content.
Interacting, Collaborating & Producing (Digital Literacy)											
Understanding the World: Guide children to make sense of their physical world and their community.	Observe how information technology is used in school.	Begin to show an awareness of how information technology is used in school.	Show an awareness of how information technology is used in school and at home.	**Recognise common uses of information technology beyond school.**	Show an awareness of how IT is used for communication beyond school.	Show an awareness of how IT is used for a range of purposes beyond school.					
Expressive Arts and Design: Explore and play with a wide range of media and materials.	Understand that digital technology can be used to create content.	With support, begin to use digital technology to create content. E.g. take photographs using an iPad.	Use digital technology to create content. E.g. Use Paint software to create a picture.	**Use technology purposefully to organise, store and retrieve digital content.**	Use digital technology to store and retrieve content.	Store, organise and retrieve content on digital devices for a given purpose.	**Select, use and combine a variety of software (including internet services) on a range of digital devices.**	Use a range of programs on a computer.	Use and combine a range of programs on a computer.	Use and combine a range of programs on multiple devices.	Appropriately select, use and combine a range of programs on multiple devices.

				Use technology purposefully to create and manipulate digital content.	The child can create original content using digital technology.	The child can create and edit original content for a given purpose using digital technology.	**Design and create a range of programs, systems and content that accomplish given goals.**	The child can design and create content on a computer.	The child can design and create content on a computer in response to a given goal.	The child can design and create programs on a computer.	The child can design and create programs on a computer in response to a given goal.
							Collecting, analysing, evaluating and presenting data and information.	The child can collect and present information.	The child can collect and present data.	The child can analyse and evaluate information.	The child can analyse and evaluate data.
							Use search technologies effectively.	The child can search for information within a single site.	The child can use a standard search engine to find information.	The child can use filters to make more effective use of a standard search engine.	The child can make use of a range of search engines and filters appropriate to finding information that is required.
							Appreciate how search results are selected and ranked.	The child can understand that search engines select pages according to keywords found in the content.	The child can understand that search engines rank pages according to relevance.	The child can understand that search engines use a cached copy of the crawled web to select and rank results.	The child can appreciate that search engines rank pages based on the number and quality of in-bound links
							Understand the opportunities networks offer for communication and collaboration.	The child can use email and videoconferencing in class.	The child can work collaboratively with classmates on a shared wiki.	The child can work collaboratively with classmates on a class website or blog.	The child can use online tools to plan and carry out a collaborative project.
							Understand how networks can provide multiple services, such as the world wide web.	The child can understand that email and videoconferencing are made possible through the internet.	The child can understand how the internet makes the web possible.	The child can understand how web pages are created and transmitted.	The child can understand how domain names are converted into IP addresses on the internet.
Data and Computational Thinking (Coding)											
Mathematics: Look for patterns and relationships; spot connections; talk to adults about what they notice.	With support, begin to understand cause and effect with everyday objects. E.g. push handle down, the door opens.	Understand cause and effect with everyday objects e.g. push handle down, the door opens.	Understand that instructions can provide an output e.g. push button on Beetbot results in an output.	**Understand what algorithms are.**	The child can understand algorithms as sequences of instructions in everyday contexts.	The child can understand algorithms as sequences of instructions or sets of rules in everyday contexts.	**Design, write and debug programs that accomplish specific goals.**	The child can design and write a program using a block language, without user interaction.	The child can design and write a program using a block language to a given brief, including simple interaction	The child can design, write and debug a program using a block language based on their own ideas.	The child can design, write and debug a program using a block programming language based on their own ideas and using Boolean values.
				Understand how algorithms are implemented as programs on digital devices; and that programs execute by	The child can program floor turtles using sequences of instructions to	The child can program on screen using sequences of instructions to implement an algorithm.	**Controlling or simulating physical systems.**	The child can explore simulations of physical systems on screen.	The child can develop their own simulation of a simple physical system on screen e.g. command a	The child can experiment with computer control applications and understand which controls affect	The child can design, write and debug their own computer control application.

				following precise and unambiguous instructions.	implement an algorithm.				sprite to move in Scratch.	which outputs.e.g. Lego robotics.	E.g. Lego robotics.
Understanding the World: Guide children to make sense of their physical world and their community.	Begin to follow simple instructions e.g. put on your shoes.	Follow instructions/directions e.g. build a LEGO object or follow a treasure hunt.	Begin to give some instructions to a Beebot and observe output.	**Create and debug simple programs.**	The child can give a sequence of instructions to a Beebot.	The child can create a simple program on screen, correcting any errors.	**Use sequence, selection and repetition in programs; work with variables.**	The child can use sequence in programs.	The child can use sequence and repetition in programs.	The child can use sequence, selection and repetition in programs.	The child can use sequence, selection, repetition and variables in programs.
				Use logical reasoning to predict the behaviour of simple programs.	The child can give explanations for what they think a program will do.	The child can give logical explanations for what they think a program will do	**Use logical reasoning to explain how some simple algorithms work.**	The child can explain a simple, sequence-based algorithm in their own words.	The child can explain an algorithm using sequence and repetition in their own words.	The child can explain a rule-based algorithm in their own words.	The child can give clear and precise logical explanations of a number of algorithms.
							Work with various forms of input and output	The child can write a program to produce output on screen.	The child can write a program that accepts keyboard input and produces on-screen output.	The child can write a program that accepts keyboard and mouse input and produces output on screen and through speakers.	The child can write a program that accepts inputs other than keyboard and mouse and produces outputs other than screen or speakers.
							Solve problems by decomposing them into smaller parts	Decompose a set of instructions for a purpose (e.g. break down series of dance moves in order to remember them).	Show peers how to decompose and how it can help (e.g. break down series of dance moves in order to remember them).	The child can plan a solution to a problem using decomposition.	The child can solve problems using decomposition, tackling each part separately.
							Use logical reasoning to detect and correct errors in algorithms and programs.	The child can use logical reasoning to detect errors in programs.	The child can use logical reasoning to detect and correct errors in programs.	The child can use logical reasoning to detect errors in algorithms.	The child can use logical reasoning to detect and correct errors in algorithms (and programs).
							Understand computer networks including the internet.	The child can understand that computer networks transmit information in a digital (binary) format.	The child can understand that the internet transmits information as packets of data.	The child can understand how data routing works on the internet.	The child can understand how mobile phone or other networks operate.