Computing Skills Map

The document below has been designed to show how we will cover all of the relevant Computing knowledge and skills across our school. The school follows the 'Switched On' scheme of work for Computing teaching; however, the context in which these lessons are taught is left to the discretion of teachers, where possible trying to match the content of their unit to their year group's termly topic.

Year Group	Key Skills		
	To use information technology	To become a digital citizen	To understand computer science
1	Can use digital technology to store and retrieve content. Can create original content using digital technology.	Can keep themselves safe while using digital technology. Can understand that information on the internet can be seen by others. Know how to use safe search when looking for images on the web. Can understand what to do if they see disturbing content online at home or at school.	Can understand algorithms as sequences of instructions in everyday contexts. Can take real-world problems and then plan a sequence of steps to solve these. The child can program floor turtles using sequences of instructions to implement an algorithm. Can create a Bee Bot (or similar) program using a number of steps in order before pressing the Go button.

		Know to close the laptop lid if they find inappropriate content and tell a teacher or adult if this happens. Can show an awareness of how IT is used for communication beyond school.	Can give explanations for what they think a program will do.
2	Can store, organise and retrieve content on digital devices for a given purpose. Can create and edit original content for a given purpose using digital technology.	Can keep safe and show respect to others while using digital technology. Can understand that they should not share personal information online. Can understand what to do if they have concerns about content or contact online. Can show an awareness of how IT is used for a range of purposes beyond school.	Can understand algorithms as sequences of instructions or sets of rules in everyday contexts. Can program on screen using sequences of instructions to implement an algorithm. Can create a simple program on screen, correcting any errors. Can give logical explanations for what they think a program will do.
3	Can use a range of programs on a computer. Can design and create content on a computer. Can collect and present information. Can search for information within a single site. Can understand that search engines select pages according to keywords found in the content.	Can use digital technology safely and show respect for others when working online. Can recognise unacceptable behaviour when using digital technology. Know who to talk to about concerns and inappropriate behaviour in school.	Can design and write a program using a block language, without user interaction. Can explore simulations of physical systems on screen. Can plan a project. Can use sequence in programs.

		Can decide whether a webpage is relevant for a given purpose or question. Can use email and videoconferencing in class.	Can write a program to produce output on screen. Can explain a simple, sequence based algorithm in their own words. Can use logical reasoning to detect errors in programs. Can understand that computer networks transmit information in a digital (binary) format. Can understand that email and videoconferencing are made possible through the internet.
4	Can use and combine a range of programs on a computer. Can design and create content on a computer in response to a given goal. Can collect and present data. Can use a standard search engine to find information. Can understand that search engines rank pages according to relevance.	Can demonstrate that they can act responsible when using computers. Can understand the difference between acceptable and unacceptable behaviour when using digital technology. Know who to talk to about concerns and inappropriate behaviour at home or at school. Can decide whether digital content is relevant for a given purpose or question. Can work collaboratively with classmates on a shared wiki.	Can design and write a program using a block language to a given brief, including simple interaction. Can develop their own simulation of a simple physical system on screen. Can work with others to plan a project. Can use sequence and repetition in programs Can write a program that accepts keyboard input and produces on-screen output. Can explain an algorithm using sequence and repetition in their own words.

			Can use logical reasoning to detect and correct errors in programs. Can understand that the internet transmits information as packets of data. Can understand how the internet makes the web possible.
5	Can use and combine a range of programs on multiple devices. Can design and create programs on a computer in response to a given goal. Can analyse and evaluate information. Can use filters to make more effective use of a standard search engine. Can understand that search engines use a cached copy of the crawled web to select and rank results.	Can demonstrate that they can act responsibly when using the internet. Can discuss the consequences of particular behaviours when using digital technology. Know how to report concerns and inappropriate behaviour in a range of contexts. Can decide whether digital content is reliable and unbiased. Can work collaboratively with classmates on a class website or blog.	Can design, write and debug a program using a block language based on their own ideas. Can experiment with computer control applications. Can plan a solution to a problem using decomposition. Can use sequence, selection and repetition in programs. Can write a program that accepts keyboard and mouse input and produces output on screen and through speakers. Can explain a ruled-based algorithm in their own words. Can use logical reasoning to detect errors in algorithms.

			Can understand how data routing works on the internet. Can understand how web pages are created and transmitted.
6	Can select, use and combine a range of programs on multiple devices. Can design and create systems in response to a given goal. Can analyse and evaluate data. Can make use of a range of search engines appropriate to finding information that is required. Can appreciate that search engines rank pages based on the number and quality of inbound links.	Can show that they can think through the consequences of their actions when using digital technology. Can identify principles underpinning acceptable use of digital technologies. Know a range of ways to report concerns and inappropriate behaviour in a variety of contexts. Can form an opinion about the effectiveness of digital content. Can use online tools to plan and carry out a collaborative project.	Can design, write and debug a program using a second programming language based on their own ideas. Can design, write and debug their own computer control application. Can solve problems using decomposition, tackling each part separately. Can use sequence, selection, repetition and variables in programs. Can write a program that accepts inputs other than keyboard and mouse and produces outputs other than screen or speakers. Can give clear and precise logical explanations of a number of algorithms. Can use logical reasoning to detect and correct errors in algorithms (and programs). Can understand how mobile phone or other networks operate.

			Can understand how domain names are converted into IP address on the internet.