Aspect P. of study Skill/ Learning Intention Knowledge	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computer Science		Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Know what an algorithm is and how it works. Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand. Create and debug simple programs. Work out what is wrong with an algorithm and write a simple algorithm. Children can work out what is wrong with a simple algorithm when the steps are out of order and can write their own simple algorithm. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code. Use logical reasoning to predict the behaviour of simple programs. Be able to read code and make predictions about what the final will look like. When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program.	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. Know what an algorithm is and how important it is to be precise when writing them. Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code. Create and debug simple programs. Create a simple algorithm that meets a purpose. Identify and correct some errors. Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors. Children's program designs display a growing awareness of the need for logical, programmable steps. Use logical reasoning to predict the behaviour of simple programs. Identify individual algorithms within a program. Write cause and effect sentences of what will happen in a program. Children can identify the parts of a program that respond to specific events and initiate specific actions.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use algorithms for real-life scenarios using deconstruction, identifying and fixing errors. Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it. Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Use repetition in programs through timer commands and repeat commands. Children demonstrate the ability to design and code a program that follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Use logical reasoning to explain how some simple algorithms work and to 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 coding structures for selection and repetition to create algorithms based on real-life scenarios. Make intuitive attempts to debug programs. When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. Children make more intuitive attempts to debug their own programs. Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Use repetition logically and integrate into programs. Begin to use 'IF statements' with variables of differing value. Use inputs and outputs. Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They understand 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. Children can make use of user inputs and outputs such as 'print to screen'. Use logical reasoning to explain how some simple algorithms work and to 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. Deconstruct complex real-life scenarios and create algorithms. Test and debug programs using logic. Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code. Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Translate increasingly complex algorithms into code. Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Adapt code to make it easier to debug and interpret.	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. Use abstraction and decomposition to create algorithms. Use a systematic approach to identify, test and debug programs. Children are able to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem. Use sequence, selection and repetition in programs; work with variables and various forms of input and output. Translate algorithms including complex codes as well as nesting structures, variables and outputs. Children translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Interpret programs by separating complex algorithms to explain the program.

				Think logically when creating programs and begin to use more complex code to identify and correct errors. Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. 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. Understand how the internet is used for communication and use these methods. Describe appropriate email conventions. Children can list a range of ways that the Internet can be used to provide different methods of communication. They can use some of these methods of communication. They can describe appropriate email conventions when communicating in this way.	Be able to trace code and identify errors using 'step throughs'. Predict outcomes of algorithms based on code. Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately 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. Recognise main components of hardware that allow networks to form. Develop understanding of online safety implications. Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.	When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables. 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. Understand pros and cons of networks and how to keep personal data safe. Select communication methods based on relevant factors. Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content.	Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole. 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. Understand and explain the difference between the internet and the World Wide Web. Know what a WAN and LAN are. Children understand and can explain in some depth the difference between the internet and the World Wide Web. Children know what a WAN and LAN are and can describe how they access the Internet in school.
Information Technology		Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Name, save and retrieve work and use simple instructions to access online resources. Children are able to sort, collate, edit and store simple digital content.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. Use databases to edit and retrieve data and make simple searches. Use a range of media in digital content. Children demonstrate an ability to organise data and retrieve specific data for conducting simple searches. Children are able to edit more complex digital data. Children are confident when creating, naming, saving and retrieving content. Children use a range of	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Understand and use online search engines to retrieve digital content. Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine.	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Understand search engines and begin to evaluate credibility of information. Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level. 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,	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Explain credibility of a webpage and complete complex searches using a search engine. Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a webpage is and the information it contains. Select, use and combine a variety of software (including internet services)	Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content. Use filters when searching and explain credibility of webpages/information. Compare a range of digital sources on quality and accuracy. Children readily apply filters when searching for digital content. They are able to explain in detail how credible a webpage is and the information it contains. They compare a range of digital content sources and are able to rate them in terms of content quality and accuracy.

			media in their digital content including photos, text and sound.	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. Select and use different software to collect, analyse, evaluate and present data. Create content and use emails to share with others. Children can collect, analyse, evaluate and present data and information using a selection of software. Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails.	systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information. Improve digital solutions and make informed choices when presenting information and share this with others. Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software. Children share digital content within their community.	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. Review and make improvements to solutions and confidently comment on its success. Share content in a variety of ways. Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software such as collaborative mode. They are able to use several ways of sharing digital content.	Children use critical thinking skills in everyday use of online communication. 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. Design and create blogs with clear connections to target audience. Evaluate quality of solutions and identify improvements and refinements. Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the Internet. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.
Digital Literacy	Understanding the world involves guiding children to make sense of their physical world and their community. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world.	Recognise common uses of information technology beyond school. Know what technology is and identify technological items. Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not. 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. Know why keeping personal information private is important. Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own	Recognise common uses of information technology beyond school. Retrieve relevant digital content using a search engine and share this knowledge. Identify technology in their world. Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge. Children make links between technology they see around them, coding and multimedia work they do in 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. Understand appropriate online behaviour and the consequences of not following these rules. Know how to report inappropriate behaviour.	Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Understand the importance of having a secure, private password and the implications if not. Understand importance of online safety and their own conduct. Know multiple ways to report inappropriate conduct. Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools. They know more than one way to report unacceptable content and contact.	Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Explore online safety and help educate others on the importance of online safety. Understand a variety of ways to report inappropriate online contact. Children can explore key concepts relating to online safety using concept mapping. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.	Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Understand and demonstrate common online safety rules and relate to personal privacy and mental wellbeing. Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.	Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact. Demonstrate common online safety rules on a variety of technologies. Use critical thinking to identify discreet inappropriate behaviours. Recognise the value of online privacy. Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking. They recognise the value in preserving their privacy when online for their own and other people's safety.

		private space such as their My Work folder on Purple Mash.	Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically. They develop an understanding of using email safely and know ways of reporting inappropriate behaviours and content to a trusted adult.				
Progression in vocabulary (Each Year group MUST know vocabulary from previous years)		Alert Avatar Button Device File Name Filter Home Screen Icon Login Log Out Menu Notification Password Private Saving Search Shared Folder Textbox Typing Describe Equal Groups Less/More Than Sort Visual Compare Data Title Algorithm Code Computer Debugging Instructions Machine Program Recipe Sequence Command Delete Direction Route Animation Background Category Copy Edit	Bug Interval Predict Test Attachment Digital Footprint Email Internet Personal Information Protection Reply Search Sharing Label Table Binary Tree Field Browser Device Domain Network Search Engine URL Web Address Web Page Website World Wide Web Clip-art Fill Symmetry Volume Presentation Quiz	Degrees Input Nest Repeat Appropriate Blog Inappropriate Password Permission Reliable Source Reputable Source Spoof Verify Vlogs Cell Address Keys Posture Spacebar Typing Address Book Blind Carbon Copy Carbon Copy Communication Compose Inbox Link Trusted Contact Branching Database Analysis Decision Modelling Simulation Solution Unrealistic Realistic Axis Graph Investigation Audio Layer Preview Review Slide Slideshow	Co-ordinates Design Execute 'If' Statement Prompt Variable AdFly Citation Collaborate Collaborative Database Cookies Copyright Data Analysis Malware Phishing Plagiarism Ransomware SMART Rules Software Spam Virus Watermark Formula Format Frames Per Second Onion Skinning Stop Motion Easter Eggs Components CPU Hard Drive Hardware Motherboard Network Card Peripherals RAM Synth/Synthesizer	Abstraction Concatenation Decomposition Efficient Friction Function Random Simplify Bibliography Creative Commons Licence Critical Thinking Encrypt Identity Theft Image Manipulation Ownership PEGI Ratings Reference Responsibility Screenshot Validity Computational Model Statistics Evaluation Feedback Promotion Quest Texture 2D 3D 3D Printing Computer Aided Design Cropping Document Hyperlink Readability Zoom	Procedure Tabs X and Y Properties Location Sharing Print Screen Screen Time Secure Websites Archive Link QR Code Sprite Domain Name Server Ethernet Hosting IP Address Internet Service Provider Local Area Network Router Wide Area Network Wireless Local Area Network Wi-Fi Case-Sensitive Clone Cloze Selfie Bit Microprocessor Nanotechnology Nibble Byte Kilobyte Megabyte Gigabyte Terabyte Transistor Conditional Formatting Range

		Eraser Font Sound Paste Redo Save Text Code Command Action Output Scale Cell Spreadsheet Technology					