Year	Core Strands						Progression of skills and knowledge
	Programming	Computational thinking	Creativity	Computer networks	Communication	Productivity	
	Planning, writing and testing computer programs for digital devices, from Bee Bots to tablets.	Some of the foundations of computer science including: algorithms, logical reasoning and decomposing problems into smaller parts.	Creating and refining original content using digital tools across a range of media	Using and understanding the internet, the web and search engines, both effectively and safely.	Making the most of computers and the internet for communicating with one or many and working on projects together.	Collecting and analysing data and information using computers. Organising, manipulating and presenting this to an audience.	
1	Understands what an algorithm is and that devices need precise instructions.	Knows that users can develop their own programs and demonstrates this by creating a simple program. Understands that programs execute by following precise instructions.	Understands that people interact with computers. Uses software under the control of the teacher to create and store digital content. Can talk about their work and make changes to improve it.	Obtains content from the world wide web using a web browser.	Understands the importance of staying safe online and keeping personal information private. Knows what to do when concerned about content and who to talk to.	Recognises that digital content can be shown in many forms. Can distinguish between some of these forms.	
2	Understands what an algorithm is and that devices need precise instructions. Detects and corrects errors (debugging).	Knows that users can develop their own programs and demonstrates this by creating a simple program. Understands that programs must follow precise instructions, checks and changes these accordingly.	Understands that people interact with computers. Uses software under the control of the teacher to create, store and edit digital content. Can talk about their work and make changes to improve it showing an awareness of the quality of the digital content collected.	Obtains content from the world wide web using a web browser.	Understands the importance of staying safe online and keeping personal information private. Knows what to do when concerned about content and who to talk to.	Recognises different types of data e.g. text and number. Understands that programs can work with different types of data and data can be presented in tables to make it clear and useful.	

3	Understands that algorithms are implemented on digital devices as programs. Can design simple algorithms and use logical reasoning to predict outcomes. Detects and corrects errors (debugging).	Uses arithmetic operators within programs and uses logical reasoning to predict the behaviour of programs. Detects and corrects simple semantic errors.	Uses technology with increasing independence to purposefully organise and create digital content. Shows an awareness for the quality of content collected and uses a variety of software to manipulate and present content. Talks about their work and makes improvements based on feedback.	Navigates the web and carries out simple searches to collect digital content.	Demonstrates safe and responsible use of computers. Knows a range of ways to report unacceptable content or contact online.	Understands the difference between data and information. Knows why sorting data in a flat file can improve searching for information and performs single criteria searches for information.	
4	Understands that algorithms are implemented on digital devices as programs. Designs algorithms that use repetition and two-way selection. Can use logical reasoning to predict outcomes. Detects and corrects errors (debugging).	Creates programs that implement algorithms to achieve given goals and uses logical reasoning to predict the behaviour of programs. Detects and corrects simple semantic errors.	Uses technology with increasing independence to purposefully organise and create digital content to achieve a given goal. Shows an awareness for the quality of content collected and uses a variety of software to manipulate and present content. Talks about their work and makes improvements based on feedback.	Understands the difference between the internet and the world wide web. Shows an awareness of and can use a range of internet services.	Recognises what is acceptable and unacceptable behaviour when using technologies and online services.	Understands the difference between data and information. Knows why sorting data in a flat file can improve searching for information and performs single criteria searches for information.	
5	Designs algorithms that use repetition and two-way selection. Can use diagrams to express solutions and logical reasoning to predict	Creates programs that implement algorithms to achieve given goals. Declares and assigns variables. Can use a sequence of selection	Recognises the audience when designing and creating digital content and makes judgements about digital content when evaluating it for	N/A	N/A	N/A	

	outputs showing an awareness of inputs.	statements in programs including if, then and else.	a given audience. Uses criteria to evaluate the quality of solutions, can identify improvement making some refinements to the solution and future solutions.				
6	N/A	N/A	N/A	Understands how to effectively use search engines and knows how results are selected. Selects, combines and uses internet services.	Demonstrates responsible use of technologies and online services and knows a range of ways to report concerns.	Performs more complex searches for information. Analyses and evaluates data and information and recognises that poor quality data leads to unreliable results and inaccurate conclusions. Knows that digital computers are binary to represent all data.	