Subject: Computing

	Progress objective 1: Computer Science	Progression Objective2: Information Technology	Progress objective 3 Digital Literacy
Pathway 1	• Understands that iteration is the repetition of a process such as a loop. Recognises that different algorithms exist for the same problem. Represents solutions using a structured notation. Can identify similarities and differences in situations and can use these to solve problems (pattern recognition). • Understands that programming bridges the gap between algorithmic solutions and computers. Has practical experience of a high-level textual language, including using standard libraries when programming. Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control. Selects the appropriate data types. • Defines data types: real numbers and Boolean. Knows that digital computers use binary to represent all data. Understands how bit patterns represent numbers and images. Knows that computers transfer data in binary. Understands the relationship between binary and file size (uncompressed). • Recognises and understands the function of the main internal parts of basic computer architecture. Understands the concepts behind the fetch-execute cycle. • Understands how search engines rank search results. Understands how to construct static web pages using HTML and CSS. Understands data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching. • Shows an awareness of tasks best completed by humans or computers. Designs solutions by decomposing a problem and creates a sub-solution for each of these parts (decomposition). Recognises that different solutions exist for the same problem. • Understands the difference between, and appropriately uses if and if, then and else statements. Uses a variable and relational operators within a loop to govern termination. Designs, writes and debugs modular programs using procedures. Knows that a procedure can be used to hide the detail with sub-solution (procedural abstraction). • Understands why and when computers are used. Understands the main functions of the operating system. • Understands how to effectively use search engines, and knows how search results are selected, including that search engines use 'web crawler programs'.	• Queries data on one table using a typical query language. • Knows that there is a range of operating systems and application software for the same hardware. • Evaluates the appropriateness of digital devices, internet services and application software to achieve given goals. Designs criteria to critically evaluate the quality of solutions, uses the criteria to identify improvements and can make appropriate refinements to the solution. • Performs more complex searches for information e.g. using Boolean and relational operators. Analyses and evaluates data and information, and recognises that poor quality data leads to unreliable results, and inaccurate conclusions. • Knows the difference between physical, wireless and mobile networks. • Recognises the audience when designing and creating digital content. Uses criteria to evaluate the quality of solutions, can identify improvements making some refinements to the solution, and future solutions.	• Recognises ethical issues surrounding the application of information technology beyond school. • Makes judgements about digital content when evaluating and repurposing it for a given audience. • Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns. • Selects, combines and uses internet services. • Understands the potential of information technology for collaboration when computers are networked.

KS3 Assessment – Year 7 Progress Grid

	Progress objective 1: Computer Science	Progression Objective2: Information Technology	Progress objective 3 Digital Literacy
Pathway 2	• Makes judgements about digital content when evaluating and repurposing it for a given audience. • Demonstrates responsible use of technologies and online services, and knows a range of ways to report concerns. • Selects, combines and uses internet services. • Understands the potential of information technology for collaboration when computers are networked.	• Understands the difference between data and information. Knows why sorting data in a flat file can improve searching for information. Uses filters or can perform single criteria searches for information. • Shows an awareness of, and can use a range of internet services e.g. VOIP. • Collects, organises and presents data and information in digital content. Creates digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience e.g. blogging. Makes appropriate improvements to solutions based on feedback received, and can comment on the success of the solution.	• Recognises what is acceptable and unacceptable behaviour when using technologies and online services.
Pathway 3	• Understands that algorithms are implemented on digital devices as programs. Designs simple algorithms using loops, and selection i.e. if statements. Uses logical reasoning to predict outcomes. Detects and corrects errors i.e. debugging, in algorithms. • Uses arithmetic operators, if statements, and loops, within programs. Uses logical reasoning to predict the behaviour of programs. Detects and corrects simple semantic errors i.e. debugging, in programs. • Recognises that a range of digital devices can be considered a computer. Recognises and can use a range of input and output devices. Understands how programs specify the function of a general purpose computer.	• Recognises different types of data: text, number. Appreciates that programs can work with different types of data. Recognises that data can be structured in tables to make it useful. • Recognises that a range of digital devices can be considered a computer. Recognises and can use a range of input and output devices. • Navigates the web and can carry out simple web searches to collect digital content. • Uses technology with increasing independence to purposefully organise digital content. • Uses a variety of software to manipulate and present digital content: data and information. Shares their experiences of technology in school and beyond the classroom. (Talks about their work and makes improvements to solutions based on feedback received.)	• Demonstrates use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online. • Shows awareness for the quality of digital content collected.
	• Has limited understanding about the function of algorithms. • Recognises that some digital devices can be considered a computer. Recognises that some input and output devices.	• Has basic knowledge of different types of data: text, number. • Uses basic navigation on the web to carry out simple web searches to collect digital content. • Uses technology with assistance. • Uses some software to alter and present digital content.	• Understands the use of computers safely and responsibly, knowing a range of ways to report unacceptable content and contact when online.