Year 8 Computing
Age Related Expectations

All children are assessed against the Age Related Expectations (ARE) within the different curriculum subjects. The ARE's are taken from the National Curriculum but are consolidated to reflect what *we* expect of a child. For example, three or four national curriculum targets might be summarised in one ARE. Judgements are generally based on a variety of different sources but will generally be a combination of on-going formative assessment in class, book work and formal summative testing.

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

	Key Performance Indicators	**Age Related Expectations**
Computer Science	- Understands a recursive solution to a problem repeatedly applies the same solution to smaller instances of the problem. - Recognises that some problems share the same characteristics and use the same algorithm to solve both (generalisation). Understands the notion of performance for algorithms and appreciates that some algorithms have different performance characteristics for the same task. - Uses nested selection statements. - Appreciates the need for, and writes, custom functions including use of parameters. - Understands and uses negation with operators. - Uses and manipulates one dimensional data structures. - Detects and corrects syntactical errors. - Understands the relationship between resolution and colour depth, including the effect on file size. Distinguishes between data used in a simple program (a variable) and the storage structure for that data. - Understands the basic function and operation of location addressable memory.	By the end of year 8 a child can confidently: - Use technologies and online services securely, and knows how to identify and report inappropriate conduct - Justify the choice of and independently combine and use multiple digital devices, Internet services and application software to achieve given goals. - Evaluate key elements of digital design to establish if the digital artefact meets the needs of the audience. They can also clearly: - Describe the key purpose of the main communication protocols used in standard network architecture. - Explain the link between file size and key attributes of digital content. - Understands how to construct static web pages including HTML and CSS In addition they can design, write, debug and then code algorithms, that: - Includes a broad range of computer science techniques. - Includes a wide range of interactivity, both internal to the program and external to the environment or user.
Information Technology	- Knows the names of protocols e.g. SMTP, iMAP, POP, FTP, TCP/IP, associated with networking computer systems.	
Digital Literacy	- Uses technologies and online services securely, and knows how to identify and report inappropriate conduct. - Identifies and explains how the use of technology can impact on society. - Justifies the choice of and independently combines and uses multiple digital devices, internet services and application software to achieve given goals. - Evaluates the trustworthiness of digital content and considers the usability of visual design features when designing and creating digital artifacts for a known audience. - Designs criteria for users to evaluate the quality of solutions, uses the feedback from the users to identify improvements and can make appropriate refinements to the solution.	