Year 6 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 that iteration is the repetition of a process such as a loop. Recognises that different algorithms exist for the same problem. - 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. - Uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control. Selects the appropriate data types. - Knows that digital computers use binary to represent all data. Understands how bit patterns represent numbers and images. Understands the relationship between binary and file size (uncompressed). - Recognises and understands the function of the main internal parts of basic computer architecture. - Understands how search engines rank search results. Understands data transmission between digital computers over networks, including the Internet i.e. IP addresses and packet switching.	By the end of year 6 a child can confidently: - Use a range of applications to create and edit a range of digital content e.g. video editing and green screening - Demonstrate the responsible use of technologies and online services, and knows a range of ways to report concerns. - Design criteria to critically evaluate the quality of solutions. Using these criteria to identify improvements and can make appropriate refinements to the solution. They can also clearly: - Identify that there is a range of operating systems and application software for the same hardware. - Recognise and understand the function of the internal parts of basic computer architecture - Understands that digital computers use binary to represent all data In addition they can design, write, debug and then code algorithms, that: - Include a range of operators and Boolean expressions. - Demonstrate an understanding that a solution can be solved using different algorithms
Information technology	- 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.	
Digital Literacy	- Performs more complex searches for information e.g. using Boolean and relational operators. - Recognises ethical issues surrounding the application of information technology beyond school. - 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.	