

	Working towards Y7 Expected standards	Y7 Expected Standards	Working above Y7 Expected Standards	Working well above Y7 Expected Standards
E-safety (Information Technology & Communication Networks)	The pupil can navigate the web and can carry out simple web searches to collect digital content and knows the difference between the internet and internet service e.g. world wide web. The pupil knows what is acceptable behaviour when using technologies and online services; and also knows a how to report concerns. The pupil knows the potential of information technology for collaboration when computers are networked.	The pupil knows how search engines rank search results and can evaluate the appropriateness of digital devices, internet services and application software to achieve given goals. The pupil understands a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy, and can recognise inappropriate content, contact and conduct and know how to report concerns The pupil can recognise ethical issues surrounding the application of information technology beyond school.	The pupil can justify the choice of and independently combine and can use multiple digital devices, internet services and application software to achieve given goals. The pupil can use technologies and online services securely, and knows how to identify and report inappropriate conduct. The pupil can identify and explain how the use of technology can impact on society.	The pupil can effectively design and create digital artefacts for a wider or remote audience. The pupil considers the properties and consequences of media when importing them into digital artefacts. The pupil can explain and justify how the use of technology impacts on society, from the perspective of social, economic, ethical and moral issues.
Algorithms	The pupil can solve problems by decomposing them into smaller parts and use logical reasoning to explain how some simple algorithms work The pupil knows that different solutions exist for the same problem. Pupil can design solutions (algorithms) that use repetition and two-way selection i.e. if, then and else.	The pupil can design, use and evaluate computational abstractions that model the state and behaviour of real world problems and physical systems The pupil can identify similarities and differences in situations and can use these to solve problems (pattern recognition). Pupil knows that iteration is the repetition of a process such as a loop.	The pupil understands several key algorithms that reflect computational thinking (e.g. searching and sorting) The pupil knows the notion of performance for algorithms and I know that some algorithms have different performance characteristics for the same task. Pupil knows a recursive solution to a problem repeatedly applies the same solution to smaller instances of the problem.	The pupil can use logical reasoning to compare the utility of alternative algorithms for the same problem The pupil can represent algorithms using a structured language. Pupil knows that the design of an algorithm is distinct from its expression in a programming language (which will depend on the programming constructs available).
Programming	The pupil can design, write and debug programs that accomplish simple goals. The pupil uses sequence, selection and repetition in programs, and can work with variables and various forms of input and output The pupil can use sequence, selection and repetition in programs	The pupil knows that programming bridges the gap between algorithmic solutions and computers. The pupil can use a range of operators and expressions e.g. Boolean, and applies them in the context of program control. The pupil has practical experience of a high-level textual language, including using standard libraries when programming.	The pupil can use and manipulate one dimensional data structures. The pupil can attempt use a range of expressions, e.g. Boolean operators, to form procedures and functions. The pupil knows the need for, and can write, custom functions including use of parameters.	The pupil can use and manipulate one dimensional data structures and can find and correct syntactical errors. The pupil knows the difference between, and can use appropriately, procedures and functions. The pupil can design and write nested modular programs that enforce reusability utilising sub-routines wherever possible.
Databases (Data & Data Representation)	Pupil knows why sorting data in a flat file can improve searching for information. Pupil can understand simple Boolean logic (e.g. AND, OR and NOT) Pupil able to analyses and evaluate data and information, and knows that poor quality data leads to unreliable results, and inaccurate conclusions.	Pupil can perform more complex searches for information e.g. using Boolean and relational operators. Pupil can define data types: real numbers and Boolean and able to search data on one table using a typical query language. Pupil knows that digital computers use binary to represent all data and understands how bit patterns represent numbers and images.	Pupils understands how data of various types (including text, sounds and pictures) can be represented and manipulated digitally in the form of binary digits Pupil can distinguish between data used in a simple program (a variable) and the storage structure for that data. Pupil knows how numbers, images, sounds and character sets use the same bit patterns.	Pupil is able to create database tables considering the most effective data types. Pupil knows what a relational database is, and knows the benefits of storing data in multiple tables. Pupil knows how and why values are data typed in many different languages when manipulated within programs. Pupil can use an array of search functions to identify key data. Pupil can perform operations using bit patterns e.g. conversion between binary and hexadecimal, binary subtraction etc.
Web Authoring (Communication & Networks & Information Technology)	Pupil is able to select, use and piece of software on a digital device to design and create a program or system and content including collecting, analysing and presenting data and information Pupil is able to be discerning in evaluating digital content Pupil can create digital content to achieve a given goal through combining software packages and internet services to communicate with a wider audience e.g. blogging.	Pupil can design criteria to critically evaluate the quality of solutions, pupil can use the criteria to identify improvements and can make appropriate refinements to the solution. Pupil knows how to construct static web pages using HTML and CSS. Pupil can evaluate the appropriateness of digital devices, internet services and application software to achieve given goals.	Pupil can design criteria for users to evaluate the quality of solutions, and can use the feedback from users to identify improvements and can make appropriate refinements to the solution Pupil can justify and knows how to construct static web pages using HTML and CSS and insert multimedia elements within their web page. Pupil can justify the choice of and independently combine and use multiple digital devices, internet services and application software to achieve given goals.	Pupil can undertake creative projects that collect, analyse, and evaluate data to meet the needs of a known user group and can document user feedback, the improvements identified and the refinements made to the solution. Pupil knows the client-server model including how dynamic web pages use server-side scripting and that web server's process and store data entered by users. Pupil able to 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

	Working towards Y8 Expected standards	Y8 Expected Standards	Working above Y8 Expected Standards	Working well above Y8 Expected Standards
E-safety (Information Technology & Communication Networks)	<p>The pupil can use technology safely, respectfully and responsibly and also Recognise unacceptable behaviour and how to report it.</p> <p>The pupil knows how to effectively use search engines, and knows how search results are selected, including that search engines use 'web crawler programs'.</p>	<p>The pupil can recognise ethical issues surrounding the application of information technology beyond school.</p> <p>The pupil understands what happens when a user requests a web page in a browser, including; browser and server exchange messages over the network; what is in the messages [http request, and HTML]; the structure of a web page - HTML, style sheets, hyperlinking to resources; what the server does [fetch the file and send it back]; what the browser does [interpret the file, fetch others, and display the lot]</p>	<p>The pupil can identify and explain how the use of technology can impact on society.</p> <p>The pupil knows names of hardware e.g. hubs, routers, switches, and the names of protocols e.g. HTTP, TCP/IP, associated with networking systems and how these are used in search engines</p>	<p>The pupil understand the ethical issues surrounding the application of information technology, an existence of legal frameworks governing its use e.g. Data Protection Act.</p> <p>The pupil knows the purpose of the hardware and protocols associated with networking computer systems</p>
Algorithms Programming	<p>The pupil uses arithmetic operators, if statements, and loops, within programs.</p> <p>The pupil detects and corrects simple semantic errors i.e. debugging, in programs. The pupil uses logical reasoning to predict the behaviour of programs.</p>	<p>Understands that programming bridges the gap between algorithmic solutions and computers.</p> <p>The pupil has practical experience of a high-level textual language, including using standard libraries when programming. The pupil uses a range of operators and expressions e.g. Boolean, and applies them in the context of program control. Selects the appropriate data types.</p>	<p>The pupil uses nested selection statements.</p> <p>The pupil appreciates the need for, and writes, custom functions including use of parameters.</p> <p>The pupil knows the difference between, and uses appropriately, procedures and functions. The pupil understands and uses negation with operators. Uses and manipulates one dimensional data structures.</p> <p>Detects and corrects syntactical errors</p>	<p>The pupil appreciates the effect of the scope of a variable e.g. a local variable can't be accessed from outside its function.</p> <p>The pupil understands and applies parameter passing. The pupil understands the difference between, and uses, both pre-tested e.g. 'while', and post-tested e.g. 'until' loops.</p> <p>Applies a modular approach to error detection and correction.</p>
Databases (Data & Data Representation)	<p>Pupil can perform a basic search using more than one field for information e.g. using Boolean and relational operators. Analyses and evaluates data and information, and knows that poor quality data leads to unreliable results, and inaccurate conclusions. Pupil has limited understanding about why data may need to be ordered e.g. alphabetically or numerically.</p>	<p>Pupil can query data on one table using a typical query language. Pupil is able to define data types: real numbers and Boolean. Pupil can perform at least one complex search using more than one criterion.</p>	<p>Pupil can perform simple operations using bit patterns e.g. binary addition. Pupil can distinguish between data used in a simple program (a variable) and the storage structure for that data. Pupil is able to perform some complex searches for information e.g. using Boolean and relational operators.</p>	<p>Pupil knows how and why values are data typed in many different languages when manipulated within programs. Pupil knows what a relational database is, and knows the benefits of storing data in multiple tables. Pupil is able to perform a wide variety of complex searches for information e.g. using Boolean and relational operators.</p>
Modelling (Using numerical data)	<p>The pupil can add some formatting to a set of data. The pupil can use a variety of simple formulae. The pupil knows the difference between text and numerical data and can present some data in different formats. The pupil is able to create a variety of charts/graphs</p>	<p>The pupil can comprehensively format content based on the reasoned data judgements. The pupil can use simple formulae and adapt using various signs. The pupil knows the difference between text and numerical data and is able to present data in an array of formats. The pupil is able to create a variety of charts/graphs and label these effectively.</p>	<p>The pupil can confidently format data and justify their choice. The pupil can use a variety of intermediate formulae. The pupil knows the difference between text and numerical data and is able to format content accordingly. The pupil is able to create a variety of charts/graphs and label these effectively. They are able to make informed judgements on what the data might/might not suggest.</p>	<p>The pupil can effectively format a chosen set of data and justify their choice(s). The pupil can use advanced formulae. The pupil has a clear understanding in the difference between various types of data. They can effectively change the format and justify their choice. The pupil is able to create a range of charts/graphs and label these effectively. They are able to make informed judgements on what the data might/might not suggest. They are able to identify trends and make suitable recommendations.</p>

	Working towards Y9 Expected standards	Y9 Expected Standards	Working above Y9 Expected Standards	Working well above Y9 Expected Standards
E-safety (Information Technology & Communication Networks)	<p>The pupil is able to briefly explain how the use of communication technology impacts on society.</p> <p>There is a limited understanding of IT based moral issues The pupil is also able to understand the impact of e-safety and some of the measures to safeguard data and persons online.</p> <p>They do not have a sound knowledge as yet about IT based legislation.</p>	<p>The pupil is able to explain and justify how the use of communication technology impacts on society, from the perspective of social, economical, political legal, ethical and moral issues.</p> <p>The pupil is also able to understand the impact of e-safety, the measures to safeguard data and persons online. The pupil is able to refer to some IT based legislation and have some understanding of the misuse of data.</p>	<p>The pupil is able to explain and justify how the use of communication technology impacts on society, from the perspective of social, economical, political legal, ethical and moral issues.</p> <p>The pupil is also able to fully understand the impact of e-safety, the measures to safeguard data and persons online. They are also able to define the difference between what is acceptable and not acceptable on line The pupil is able to refer to IT based legislation and understand the implications of data that has been misused.</p>	<p>The pupil is able to explain and justify how the use of communication technology impacts on society, from the perspective of social, economical, political legal, ethical and moral issues.</p> <p>The pupil is also able to understand the impact of e-safety, the measures to safeguard data and persons online. The pupil is able to refer to IT based legislation and provide an in-depth understanding regarding the implications of data that has been misused. They must be able to evaluate and make an informed decision as to what legislation may be applied and what sanctions may be imposed as a consequence.</p>
Algorithms	<p>The pupil understands what an algorithm is and can express simple algorithms using symbols. The pupil can create programs that implement algorithms to achieve given goals. The pupil can show care and precision to avoid errors The pupil can use logical reasoning to predict outcomes. The pupil can find and correct errors i.e. debugging, in algorithms.</p>	<p>The pupil understands that the design of an algorithm is distinct from its expression in a programming language (which will depend on the programming constructs available). The pupil is able to explain the effectiveness of algorithms and models for similar problems. The pupil is able to locate information that can be filtered out in generalizing problem solutions (abstraction). The pupil has a basic understanding of how to apply logical reasoning to describe how an algorithm works. The pupil has sufficient knowledge of how to represent algorithms using a structured language.</p>	<p>The pupil is able to fully understand the design of an algorithm is distinct from its expression in a programming language (which will depend on the programming constructs available). The pupil is able to evaluate the effectiveness of algorithms and models for similar problems. The pupil has an in-depth knowledge of where information can be filtered out in generalizing problem solutions (abstraction). The pupil is able to apply logical reasoning to explain how an algorithm works. The pupil has an understanding of how to represent algorithms using a structured language.</p>	<p>The pupil understands that different solutions exist for the same problem. The pupil knows a recursive solution to a problem repeatedly applies the same solution to smaller instances of the problem. The pupil evaluate the effectiveness of algorithms and models for similar problems. The pupil can design a solution to a problem that depends on solutions to smaller instances of the same problem (recursion). The pupil has a sound knowledge of how to represent algorithms using a structured language.</p>
Programming	<p>The pupil knows that programs run by following precise instructions. The pupil has an understanding that users can write their own programs. The pupil can create a simple program. The pupil can run, check and change basic programs.</p>	<p>The pupil has an understanding of the effects of the scope of a variable e.g. a local variable can't be accessed from outside its function. The pupil is able to understand and apply parameter passing. The pupil can distinguish between, and they can use, both pre-tested e.g. 'while', and post-tested e.g. 'until' loops. The pupil can apply a modular approach to error detection and correction once a program has been run.</p>	<p>The pupil has the ability to recognise the link between algorithmic solutions and computers. The pupil is able to use a variety of operators and expressions e.g. AND, OR, NOT and is able to apply them in the context of program control. The pupil is able to apply parentheses when searching different criteria to find more advanced results. The pupil can use nested selection statements including like =, <, >, >=, <=, IN, BETWEEN etc. The pupil can detect and apply a range of corrections relating to syntactical errors.</p>	<p>I can design and write nested modular programs that enforce reusability utilising sub-routines wherever possible. I know the difference between 'While' loop and 'For' loop, which I can use a loop counter. The pupil is able to make decisions based on how and why nested solutions should be used The pupil is able to identify and correct syntactical errors.</p>
Databases (Data & Data Representation)	<p>The pupil can explain different types of data: text, number. The pupil can show that programs can work with different types of data and understand that data can be structured in tables to make it useful. The pupil is able to create a data table based on some prior understanding of data types. The pupil knows how some values vary i.e. text or numeric data The pupil can use a basic filter to perform single criteria searches for information. The pupil has limited knowledge how to create a simple Form/Report using manipulated data.</p>	<p>The pupil understands the difference between data and information. The pupil is able to understand the relationship between data representation and data quality. The pupil has a clear understanding between the relationship, binary and electrical circuits, including Boolean logic. The pupil knows how and why values are data typed in many different languages when manipulated within programs. The pupil can use a filter or can perform single criteria searches for information. The pupil has a reasonable understanding of how to create a simple Form/Report using manipulated data.</p>	<p>The pupil can perform operations using bit patterns e.g. conversion between binary and hexadecimal, binary subtraction etc. The pupil knows and can explain the need for data compression, and performs simple compression methods. The pupil can define what a relational database is, and appreciates the benefits of storing data in multiple tables. The pupil can perform some complex searches for information e.g. using Boolean and relational operators. The pupil can use a range of filters to perform single criteria searches for information. The pupil has an in-depth understanding of how to create a Form/Report using manipulated data.</p>	<p>The pupil analyses and evaluates data and information, and understands that poor quality data leads to unreliable results, and inaccurate conclusions. The pupil appreciate the value and benefits associated with managing data including the factors that may lead to data duplication or data redundancy. The pupil is able to identify how to link two or more data tables and identify how to normalise data to ensure greater efficient use of electronic data. The pupil can perform an array of complex searches for information e.g. using Boolean, relational and formulaic operators. The pupil can use a range of filters to perform single/multiple criteria searches for information. The pupil has an in-depth understanding of how to create a Form/Report using manipulated data. They are able to add control buttons and a working switchboard.</p>

			They are able to add control buttons and a working switchboard.	They can add automated commands using Macros to assist the user when handling information.
Web Authoring (Communication & Networks & Information Technology)	<p>The pupil can name different web browsers and define their purpose</p> <p>The pupil can use search engines to refine a search</p> <p>The pupil understands how to construct a basic web page web pages using HTML and CSS.</p> <p>The pupil understands how to construct simple static web pages using only HTML and some limited digital media.</p> <p>The pupil can use a simple spreadsheet to model data.</p> <p>The pupil can use several formulae to perform a series of calculations.</p> <p>The pupil is able to present data in a chart/graphical format including labelling all axis and proving a key to data highlighted.</p>	<p>The pupil understands the difference between the internet and internet service e.g. world wide web.</p> <p>The pupil can demonstrate how to effectively use search engines, and appreciates how search results are selected, including that search engines use 'web crawler programs'.</p> <p>The pupil can show an awareness of, and can use a range of internet services e.g. VOIP.</p> <p>The pupil understands how to construct static web pages using HTML, CSS and embed digital media.</p> <p>The pupil can use a spreadsheet to model data and consider variables that provide varied outcomes.</p> <p>The pupil can use a variety of formulae to perform a series of calculations including Goal seek and IF statements.</p> <p>The pupil is able to present data in a labelled graphical format. They can use other functions to interrogate data.</p>	<p>The pupil can show responsible use of technologies and online services, and knows a range of ways to report concerns.</p> <p>The pupil can explain how search engines rank search results.</p> <p>The pupil can list names of hardware e.g. hubs, routers, switches, and the names of protocols e.g. SMTP, iMAP, POP, FTP, TCP/IP, associated with networking systems.</p> <p>The pupil has a clear understanding of how to construct static web pages using HTML, CSS and embed digital media.</p> <p>The pupil can use a spreadsheet to model a range of data and consider variables that provide varied outcomes based on scenarios.</p> <p>The pupil can use a variety of formulae to perform a series of calculations including Goal seek and IF statements.</p> <p>The pupil is able to present data in a range of labelled graphical format. They can use a wide variety of functions to interrogate data.</p>	<p>The pupil understands data transmission between digital computers over networks, including the internet i.e. IP addresses and packet switching.</p> <p>The pupil knows the purpose of the hardware and protocols associated with networking computer systems.</p> <p>The pupil understands the client-server model including how dynamic web pages use server-side scripting and that web servers process and store data entered by users.</p> <p>The pupil is able to use HTML as front end interface to create design and edit web content using HTML, CSS and embed digital media.</p> <p>The pupil is aware of the hardware associated with networking computer systems, including WANs and LANs, I know their purpose and how they work, including MAC addresses.</p> <p>The pupil is able to use a spreadsheet to model a range of data and consider variables that provide varied outcomes based on scenarios.</p> <p>The pupil can use a variety of formulae to perform a series of calculations including Goal seek, IF statements, and V Lookup.</p> <p>The pupil is able to present detailed data using appropriate means.</p> <p>They can use a wide variety of formulae and functions to interrogate data based on various scenarios.</p>