	Year 3	Year 4	Year 5	Year 6	KS3
Computer Science	Can read simple linear algorithms in a familiar programming language (e.g. Scratch, Lego WeDo). Are able to predict what the outcome of a program will be, run the program and check their results. Plan and design a program for a specific task.	Read increasing complex programs in a familiar programming language and can suggest plausible meanings for new blocks of code. Can produce diagrams to show how the code could look before creating blocks of code on screen. Know that programs can	Plan and design a solution (algorithm) that uses repetition and two-way selection i.e. if, then and else. Can explain the difference between 'if', 'then' and 'else' statements. Can independently declare and assign variables. Show an awareness of	Use decomposition to plan and design solutions for different parts of a problem. Design, write and debug modular programs using procedures. Know that a procedure can be used to hide the detail with a sub-solution (procedural abstraction).	Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem. Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions U Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able

Find and correct errors i.e. debugging in an algorithm written in a familiar programming language. Show the use of sequence and repetition in programs.	work with different types of data (text, numbers, sound). Are able to use a range of input and output devices (sensors, motors etc.)	tasks best completed by humans or computers. Know that different solutions exist for the same problem.		to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal] Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability Understand a range of ways to use technology safely, respectfully, responsibly and securely,

					including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.
IT and Digital Literacy	Refine projects that include text, sound and graphics that produce a digital artefact with a given purpose. Collect images from devices or the internet and use simple editing tools. Collect information from a range of sources and use this to find answers to questions. Discuss how to improve their	Capture good quality still and moving images considering the purpose and the audience. Plan, produce and edit a media project (presentation, animation, film) taking into account the audience and the copyright of resources. Can explain the difference between data and information.	Know the difference between the internet and internet service e.g. the World Wide Web. Compare the difference between hardware and application software, and the roles within a computer system. Produce their own success criteria to evaluate their own work and that of others.	work with increasing confidence both independently and as a group to create a digital project, which ○ Meets a brief / solves a problem ○ Has used a range of appropriate software ○ Has been created for a targeted audience ○ Demonstrates an awareness of copyright	Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users Create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability Understand a range of ways to use technology safely, respectfully, responsibly and securely,

work and knows that by using technology any editing can be made more quickly. Use the internet to carry out simple web searches to collect digital content. Show an awareness of copyright and understand that digital work belongs to the author. Know a range of ways to report unacceptable content they	Can organise data in a table to make it useful. Use a spreadsheet to produce simple graphs. Explain how and when to use range on online services responsibly, identifying possible risks and how they can be reduced.	Use the criteria to improve the content and design of their digital project. Collect data in a variety of ways; use this to produce graphs or charts which are used in appropriate software to present the analysis. Make spreadsheet models to answer given problems, using a range of simple calculations and functions.	○ Shows evidence of evaluation and improvement. Analyse and evaluate data and know that poor quality data leads to unreliable results, and inaccurate conclusions. Can represent data in a variety of formats (charts, tables, graphs, infographics) and can explain when each would be appropriate. Know how to effectively use search engines, and know how search results are selected, including that	including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns.

	might encounter online. Discuss what is appropriate contact when online.			search engines use 'web crawler programs'. Perform more complex searches for information e.g. using Boolean and relational operators.	