



Key Stage 2

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

	Year 7	Year 8	Year 9	Year 10	Year 11
Term 1	Block programming Programming using an online editor <ul style="list-style-type: none"> • Sequencing & iteration • Variables & use in programs • Loops, random, if and else 	Developing programming Programming skills using a high level language: <ul style="list-style-type: none"> • Strings and variables • Functions, procedures repetitions & loops • Writing algorithms 	Development of Computer Science Developing computational skills <ul style="list-style-type: none"> • Logical thinking • Data representation • Python programming 	Algorithms & Practical programming skills Higher level programming skills: <ul style="list-style-type: none"> • Searching, sorting & pseudocode • Iteration & expressions • Arrays, lists & files 	Logic Languages & Data representation <ul style="list-style-type: none"> • Logic diagrams and truth tables • Binary & hexadecimal ASCII • Images, sound & compression
Term 2	Using computers safely securely & responsibly Skills in internet searching, presentations, word processing: <ul style="list-style-type: none"> • Social networking • Data security • Being safe online 	Intro. To Computer Science Practical skills of how computers work: <ul style="list-style-type: none"> • New technologies • Binary representation • Hardware & software 	Creative iMedia Skills in combining images, text and video across applications: <ul style="list-style-type: none"> • Animation • Video and sound creation • Image & text manipulation 	System Architecture & Networks <ul style="list-style-type: none"> • Purpose of CPU, VNA & registers • Volatile and non volatile storage • WAN, LAN, wired & wireless 	Algorithmic thinking & defensive design <ul style="list-style-type: none"> • Flowcharts • Searching and sorting algorithms • Pseudocode
Term 3	Carousel—16 lessons approximately over two blocks. These can run concurrently or over two separate occasions throughout the year.	Carousel—16 lessons approximately over two blocks. These can run concurrently or over two separate occasions throughout the year.	Carousel—16 lessons approximately over two blocks. These can run concurrently or over two separate occasions throughout the year.	System software, security & Ethics <ul style="list-style-type: none"> • Network threats • Operating system and utility software • Ethics, culture legislation & privacy 	Revision <ul style="list-style-type: none"> • Exam paper skills • Past questions, structure, commands marking
	Cultural Exposure: <ul style="list-style-type: none"> • Digital literacy • What to post and not to post online • 	Cultural Exposure: <ul style="list-style-type: none"> • Use of programs in everyday life • Artificial systems and how they impact our lives 	Cultural Exposure: <ul style="list-style-type: none"> • Visit by & to a local university to experience CS courses • Advertising and its influences in our everyday lives 	Cultural Exposure: <ul style="list-style-type: none"> • Creativity in computing to understand & change the world • Security threats that could jeopardise our systems • Ethical use of robots, illegal downloads 	Cultural Exposure: <ul style="list-style-type: none"> • Relationship between human & computer interaction • Privacy issues and potential attacks • Exam practise