

Qualifications
International Computer Driving Licence (ICDL)
GCSE Computer Science

Key Stage 3

Pupils should be taught to:

- 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
- 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 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

Adams (7)	Impact of technology – Collaborating online respectfully	Networks from semaphores to the Internet	Using media – Gaining support for a cause	Programming essentials in Scratch – part I	Programming essentials in Scratch – part II	Modelling data – Spreadsheets
Watson (7)	Impact of technology – Collaborating online respectfully	Networks from semaphores to the Internet	Using media – Gaining support for a cause	Programming essentials in Scratch – part I	Programming essentials in Scratch – part II	Modelling data – Spreadsheets
Banksy (7)	Impact of technology – Collaborating online respectfully	Networks from semaphores to the Internet	Using media – Gaining support for a cause	Programming essentials in Scratch – part I	Programming essentials in Scratch – part II	Modelling data – Spreadsheets
Newton (8)	Mobile app development	Media - Vector Graphics	Developing for the web	Representations – from clay to silicon	Computer Systems	Introduction to Python programming
Parks (8)	Mobile app development	Media - Vector Graphics	Developing for the web	Representations – from clay to silicon	Computer Systems	Introduction to Python programming
Castner (9)	Media - Animation	Python programming with sequences of data	Data science	Representations – going audiovisual	Cybersecurity	Physical computing
Curie (9)	Media - Animation	Python programming with sequences of data	Data science	Representations – going audiovisual	Cybersecurity	Physical computing