

Subject: Computer Science

GCSE Computer Science

Riverside School computing curriculum's primary aim is to produce creative problem solvers who possess the self-regulated skillset, mental fortitude and emotional maturity to embrace unfamiliar challenges with confidence.

This is achieved through a strong focus on application of knowledge to real life scenarios throughout the programme. In earlier key stages students are guided through a sequence of learning and problem solving which prepares them for deeper application later on where they will combine and link prior knowledge. This is supported by initiatives linked to the wider world such as national digital literacy programmes. The aim is to enable learners to be effective applicators in more loosely defined scenarios closely aligned to real world problem solving which promotes creativity and abstract reasoning.

The drive towards building important life skills such as resilience is strongly supported by our department's focus upon risk-taking and the encouragement of students to view mistakes as a learning opportunity and not a failure. The style of problem solving in our subject lends itself to team based approaches in industry and effective collaboration is strongly encouraged in our programme. An example would be the paired programming paradigm.

To succeed in our subject students must possess a wide range of personal and academic qualities and thus we have several strands of assessment which helps us to build a comprehensive picture of each student. This allows us to tailor our teaching to address the social and emotional needs of our students alongside academic differentiation to achieve a holistic education.

Year 9 Topics

- Autumn Term – algorithms and programming
- Spring Term – binary, hexadecimal and Boolean logic
- Summer Term – data representation, security

Year 10 Topics

- Autumn Term – networks and internet
- Spring Term – computer systems in depth, Von Neumann architecture
- Summer Term – memory and storage, system software, standard algorithms

Year 11 Topics

- Autumn Term – programming project
- Spring Term – ethical, legal, cultural and environmental

Year 12 Topics

- Autumn Term – Data representation, OO programming, Computer Systems
- Spring Term – Ethics, Abstraction, Decomposition, Software Development
- Summer Term – Databases, Networks, Web technologies, Polymorphism

Year 13 Topics

- Autumn Term – Data structures, Standard algorithms, Ethics and Legislation
- Spring Term – Programming project

Assessment - Specification: OCR 9-1 J277

Assessment is through terminal examinations comprising 100% of the total marks.

Assessment - Specification: OCR H446

Assessment is through terminal examinations comprising 80% of the total marks and a programming project comprising 20% of the marks