Year 11 Computing

What have students at St. Crispin's been taught to understand and be able to do?

Core Knowledge

Unit 1 – Computer networks

Students can explain what a computer network is, discuss the merits of wired and wireless networking, LAN, Wan, Pan, topologies, protocols and the 4-layer TCP/IP model

Unit 2 – Programming components 2

Students learn and apply advanced programming concepts which include string handling nested selection, nested iteration, subroutines and random number generation. Students build on their knowledge and application components in Year 10.

Unit 3 – Programming components 3

Students understand and know the differences between low- and high-level languages. They understand structured approach to programming, arrays, 2-dimensional arrays and databases. Students build on their advanced knowledge and application of programming component 2.

Unit 4 – Databases and SQL

This new unit covers everything in Section 3.7 of the latest AQA 8525 specification. It begins by covering the concept of a database before extending this into relational databases and associated terminology. Inconsistency and redundancy are covered before looking at Structure Query Language (SQL). SQL is used to write and interpret simple queries and to insert, update or delete data from a database table.

Unit 5 – Programming process 1

Students learn robust and secure programming processes. They can discuss the merits of translators, compilers, assembly languages and interpreters and the differences.

Core Skills

- Acquiring and applying knowledge of the use of algorithms in computer programs to solve problems

- Developing computer programs to solve problems

- Evaluating the effectiveness of computer programs/solutions and the impact of, and issues related to, the use of computer technology in society

- An understanding of current and emerging technologies, how they work and applying this knowledge in a range of contexts.

Year 11 Computing continued

Core Knowledge	Core Skills
.**Unit 6 – Programming processes 2 revision** Students understand and can create and use files, relational databases, and structured query language. They also learn testing, validation and authentication in programming. **Unit 7 – Revision** Students consolidate their learning. Using past papers and other resources such as Seneca and GCP workbooks for revision.	

How has learning been assessed?

Year 11 students have an official paper 1 and paper 2 mock exam near the end of the winter term and a series of assessments throughout the year to support their revision.

What is coming up in the following year?

If students continue onto A-Level Computer Science they will extend their knowledge developed in Year 10-11 and become far more competent computer science students.

We endeavour to develop all students into successful and competent programmers who:

- have the desire to develop and apply their analytical, problem-solving, design, and computational thinking skills within programming and computing as a whole

- become digitally literate – able to use, and express themselves and develop their ideas through information and communication technology – at a level suitable for the future workplace and as active participants in a digital world

- understand the impacts of digital technology to the individual, wider society.