

## OCR GCSE Computer Science



Computing is everywhere and, for most of us, life without computers is unimaginable, with computer systems affecting most of the things that we do. For example, computers are used for entertainment, to do business, control machinery, navigate planes, support administration and communicate.

Obviously, a GCSE in Computing gives pupils skills needed to start their journey towards a career in computer science. But even more than this, it will give them some of the skills you needed for any career. Want to become a designer, architect, engineer, publisher, medical researcher, sports coach, music or film producer (the list is endless)? Then Computing is one of the best points to start from.

Computer Science is an eBacc subject and recognised as the fourth Science, on a par with Physics, Biology & Chemistry.

### Topics include:

- **Problem Solving** (algorithms, decomposition and abstraction).
- **Programming** (code development, constructs, datatypes and structures, input/output, operators and subprograms).
- **Data** (binary, data representation, data storage and compression, encryption and databases).
- **Computers** (hardware, logic, software and programming languages)
- **Communication and the internet** (networks, network security, the Internet and the worldwide web).
- **The bigger picture** (emerging trends, issues and impact).

### Assessment on this course is made via the following elements:

- **Principles of Computer Science.** This component is assessed via a written examination, and counts for 50% of the final award. Topics 1-6 (see above) are tested. Examination to be taken in Year 11.
- **Application of Computational Thinking.** This component is assessed via a scenario-based examination, and counts for 50% of the final award. The main focus is on Topics 1 and 2 (see above), but it may draw on all other topics. Examination to be taken in Year 11.

### Topics Covered per Half Term

Terms	Year 10	Year 11
<b>Autumn 1</b>	<ul style="list-style-type: none"> <li>• Introduction to course</li> <li>• Systems Architecture</li> <li>• Memory</li> <li>• Programming</li> </ul>	<ul style="list-style-type: none"> <li>• Programming Project</li> </ul>
<b>Autumn 2</b>	<ul style="list-style-type: none"> <li>• Storage</li> <li>• Wired and wireless networks</li> <li>• Programming</li> </ul>	<ul style="list-style-type: none"> <li>• Programming Project</li> <li>• Algorithms</li> </ul>
<b>Spring 1</b>	<ul style="list-style-type: none"> <li>• Network topologies, protocols and layers.</li> <li>• Programming</li> </ul>	<ul style="list-style-type: none"> <li>• Programming techniques</li> <li>• Producing Robust Programs</li> <li>• Computational Logic</li> </ul>
<b>Spring 2</b>	<ul style="list-style-type: none"> <li>• Systems security</li> <li>• Systems software</li> <li>• Programming</li> </ul>	<ul style="list-style-type: none"> <li>• Translators and facilities of languages</li> <li>• Data Representations</li> <li>• Revision</li> </ul>
<b>Summer 1</b>	<ul style="list-style-type: none"> <li>• Ethical, legal, cultural and environmental concerns.</li> <li>• Programming</li> </ul>	<ul style="list-style-type: none"> <li>• Revision</li> </ul>
<b>Summer 2</b>	<ul style="list-style-type: none"> <li>• Programming</li> </ul>	<ul style="list-style-type: none"> <li>• Revision</li> </ul>