



Information for Parents

1. Overview

The WJEC AS and A Level in Computer Science encourages learners to develop:

- an understanding of, and the ability to apply, the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms and data representation
- the ability to analyse problems in computational terms through practical experience of solving such problems, including writing programs to do so the capacity for thinking creatively, innovatively, analytically, logically and critically
- the capacity to see relationships between different aspects of computer science
- mathematical skills
- the ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology

Computers are widely used in all aspects of business, industry, government, education, leisure and the home. In this increasingly technological age, a study of computer science, and particularly how computers are used in the solution of a variety of problems, is not only valuable to the learners but also essential to the future well-being of the country.

Computer science integrates well with subjects across the curriculum. It demands both logical discipline and imaginative creativity in the selection and design of algorithms and the writing, testing and debugging of programs; it relies on an understanding of the rules of language at a fundamental level; it encourages an awareness of the management and organisation of computer systems; it extends the learners' horizons beyond the school or college environment in the appreciation of the effects of computer science on society and individuals. For these reasons, computer science is as relevant to a learner studying arts subjects as it is to one studying science subjects.

The WJEC AS and A Level in Computer Science has been designed to give an in-depth understanding of the fundamental concepts of computer science and a broad scope of study opportunities.

2. Syllabus

This specification promotes the integrated study of computer science. It will enable learners to develop a broad range of skills in the areas of programming, system development, computer architecture, data, communication and applications.

AS students undertake two units. AS unit 1 examines the fundamentals of Computer Science. Within AS unit 2, students will undertake practical programming to solve problems.

There is **no coursework** undertaken until students reach A2 level in Year 14. Students continuing to A2 will also explore a number of areas related to computer science including, data structures, logical operations, algorithms and programs, principles of programming, systems analysis, software engineering, program construction and economic, moral, legal, ethical and cultural issues relating to computer science.

The full GCE WJEC Computer Science syllabus can be found on Google Sites or WJEC's website (see <https://www.wjec.co.uk/media/wl4kj5l1/wjec-gce-computer-science-spec-from-2015.pdf>).

3. Assessment Weighting

Unit	Teacher	Assessment	Weighting
AS Units			
AS Unit 1 - Fundamentals of Computer Science	Miss J Rollins	Written Examination: 2 hours	62.5% of AS qualification 25% of Overall Qualification
AS Unit 2 - Practical Programming to Solve Problems		On-Screen Examination: 2 hours	37.5% of AS qualification 15% of Overall Qualification
A2 Units			
A2 Unit 3 - Programming and System Development	Miss J Rollins	Written Examination: 2 hours	20% of Overall Qualification
A2 Unit 4 - Computer Architecture, Data, Communication and Applications		Written Examination: 2 hours	20% of Overall Qualification
A2 Unit 5 - Programmed Solution to a Problem		Non-Examined Assessment	20% of Overall Qualification

4. AS Level Course Content

AS Unit 1 and AS Unit 2	
Topic 1 – Hardware and Communication Topic 2 – Logical Operations Topic 3 – Data Transmission Topic 4 – Data Representation and Data Types Topic 5 – Data Structures Topic 6 – Organisation of Data Topic 7 – Database Systems Topic 8 – The Operating System Topic 9 – Algorithms and Programs	Topic 10 – Principles of Programming Topic 11 – Systems Analysis Topic 12 – Software Engineering Topic 13 – Program Construction Topic 14 – Need for Different Types of Systems Topic 15 – Practical Programming <i>*No Theory Booklets</i> Topic 16 – Data Security and Integrity Processes Topic 17 – Economic, Moral, Legal, Ethical & Cultural Issues Relating to Computer Science

5. Key Dates

AS WJEC Computer Science exams:

Exam dates have not yet been released for summer 2025. When they do become available, pupils will be made aware of the relevant dates.

6. Support

- Google Sites VLE: pupil notes, learning activities and online notes
- Specimen papers with mark schemes
- WJEC Website: <https://www.wjec.co.uk/qualifications/computer-science/computer-science-gce/>
- Email – nward512@c2ken.net