

**COMPUTER SCIENCE**  
**Gwyddoniaeth Cyfrifiadurol**

Course Title: GCSE Computer Science  
Examination Board: WJEC  
Qualification: GCSE



Unit	Assessment Type	% of overall grade	Overview
<b>1</b> Understanding Computer Science	Written examination (1½ Hours)	45%	Topics include: <ul style="list-style-type: none"> <li>• Computer Systems</li> <li>• Data Representation</li> <li>• Computer Software</li> <li>• Networks</li> <li>• Internet &amp; Communications</li> <li>• Algorithms</li> <li>• Programming</li> <li>• Ethical, Social, and Legal Aspects</li> </ul>
<b>2</b> Solving Problems Using Computers	Practical on-screen assessment (2 Hours)	30%	A series of tasks set and marked by WJEC and completed on-screen by the candidate. These tasks will assess the practical application of programming knowledge.
<b>3</b> Developing Computing Solutions	Controlled assessment (15 Hours)	25%	Candidates have the opportunity to develop a software solution to meet a brief issued by WJEC. Students can choose from a range of programming languages including C, C++, Greenfoot, Java, Pascal, Python and Visual Basic.  Tasks include: <ul style="list-style-type: none"> <li>• Design a solution</li> <li>• Implementation</li> <li>• Program documentation</li> <li>• Testing</li> <li>• Evaluation</li> </ul>

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### COURSE OUTLINE

Computing is of enormous importance to the economy, and the role of Computer Science as a discipline itself, as an 'underpinning' subject across science and engineering, is growing rapidly. Young people need to develop skills that will enable them to pursue a career in Computer Science if they so choose, and which will also help them gain valuable skills for life - for example, in innovation, reasoning, logic, resourcefulness, precision, problem solving and clarity. These skills will enable them to become authors of computational tools rather than simply users. As adult workers, young people will be applying for jobs that have not yet been invented. Technology changes but the principles and concepts upon which they are built remain constant. A good grounding in Computer Science will teach young people how to deal with change later in life and play an active and effective role in the digital world.

Computer Science offers candidates a unique opportunity to gain an understanding of how computers work and to create and troubleshoot computer programs for real-life purposes relating to their own personal interests. Computer Science develops valuable programming and computational thinking skills, which are increasingly relevant to a wide variety of jobs. Employers want workers with an understanding of rigorous principles that can be applied to changing technologies.

### ENTRY REQUIREMENTS

Computer Science is an academically challenging subject. In order to deal with the complexities of the course, in particular Boolean logic, developing algorithms, programming and arithmetic with alternative number systems you must be progressing well towards at least Level 6 in ICT and Mathematics in Year 9.

### QUALITIES REQUIRED TO BE A SUCCESSFUL COMPUTER SCIENCE STUDENT

Students must:

- have a genuine interest in learning how computers work
- have good literacy and numeracy skills
- be prepared to tackle difficult and technically challenging problems
- be prepared to invest time and effort to develop computing skills outside of lessons
- be prepared to study and research topics independently to develop understanding
- be tenacious in their approach to solving problems
- be thorough and pay attention to detail in all aspects of their work
- be methodical and organised
- have a 'can do' attitude
- be resourceful and focus on solutions rather than problems
- be excellent team workers

### CAREER OPPORTUNITIES AND PROGRESSION

The course provides excellent preparation for higher study and employment in the field of computer science. The increasing importance of information technologies means there will be a growing demand for professionals who are qualified in this area. Students who've taken a GCSE in Computing and who then progress to study the subject at A Level or university will have an advantage over their colleagues who are picking up the subject at these levels.

For further information please contact Mr Setchfield or email [tsetchfield@sjhs.newport.sch.uk](mailto:tsetchfield@sjhs.newport.sch.uk)