GCSE COMPUTER SCIENCE

Exam Board: WJEC Eduqas

What is GCSE Computer Science?

Computers are widely used in all aspects of business, industry, government, education, leisure and the home. In this technological age, a study of computer science, and particularly how computers are used in the solution of a variety of problems, is essential to learners.

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 learners’ horizons beyond the

school or college environment in the appreciation of the effects of computer science on society and individuals.

The WJEC Eduqas GCSE in Computer Science has been designed to give an understanding of the fundamental concepts of computer science and a broad scope of study opportunities. This specification has been designed to free centres to concentrate on innovative delivery of the course by having a streamlined, uncomplicated,

future-proof structure, with realistic technological requirements.

What will I study?

There are three units of study which cover the following areas:

Component 1: Understanding Computer Science

This component investigates hardware, logical operations, communication, data representation and data types, operating systems, principles of programming, software engineering, program construction, security and data management and the impacts of digital technology on wider society.

Component 2: Computational Thinking and Programming

This component investigates problem solving, algorithms and programming constructs, programming languages, data structures and data types and security and authentication

Component 3: Programming Project

This component requires learners to produce a programmed solution to a problem. They must analyse the problem, design a solution to the problem, develop a final programmed solution, test the solution and give suggestions for further development of the solution. Throughout the production of the solution learners are required to produce a refinement log that evidences the development of the solution.

What are the benefits of GCSE Computer Science?

The WJEC Eduqas GCSE in Computer Science encourages learners to:

understand and apply the fundamental principles and concepts of computer science, including abstraction, decomposition, logic, algorithms, and data representation

analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs to do so think creatively, innovatively, analytically, logically and critically understand the components that make up digital systems, and how they communicate with one another and with other systems

understand the impacts of digital technology to the individual and to wider society

apply mathematical skills relevant to computer science

How is the course examined?

The full GCSE is assessed as follows:

\* Component 1: Understanding Computer Science

Written examination: 1 hour 45 minutes - 62.5% of the qualification

\* Component 2: Computational thinking and Programming.

On-Screen examination: 2 hours - 37.5% of the qualification

\* Component 3: Software Development

Programming project: 20 hours – Unweighted. This component does not contribute to the final mark or qualification grade.