Computer Science

GCSE

Course Leader:	Mr J Partrick
Contact Email:	jpartrick@tgschool.net
Examination Board:	AQA
Assessment:	100% External Written Examinations (2 papers)

Why should I study this subject at Key Stage 4?

Perhaps the main reason to study Computer Science is that it is a dynamic and rapidly growing area that has become an integral part of the world we live in today. A 2020 UK report showed that the growth in IT related job roles was 11% with nearly 3 million people in tech related roles, and that a tenth of all job vacancies were tech related. It is estimated that by June 2021 there will be 100,00 job openings per month.

What does the course involve?

Component 1 – Principles of Computer Science (50%)

This section will assess all theoretical components which include:
Demonstrating an understanding of what algorithms are. Understanding the requirements for writing program code. Understanding binary representation, data representation, data storage and compression, encryption and databases. Understanding components of computer systems.Understanding computer networks, the internet and the worldwide web. Demonstrating an awareness of emerging trends in computing technologies, the impact of computing on individuals, society and the environment, including ethical, legal and ownership issues.

Component 2 – Application of Computational Thinking (50%)

Based on a given scenario, the main focus of this component will be: Understanding of what algorithms are, what they are used for and how they work; ability to interpret, amend and create algorithms. Understanding how to develop program code and constructs, data types, structures, input/output, operators and subprograms. The scenario may also draw upon the range of computational elements as listed in component one.

Skills developed

Students will develop and apply computational thinking skills to analyse problems and design solutions across a range of contexts whilst gaining practical experience of designing, writing, and testing computer programs that accomplish specific goals. Students will develop an awareness of the impact of computing on individuals, society and the environment, including ethical, legal and ownership issues.

This course is best suited to students with a high standard of mathematics and are confident in developing their use of new languages.