

## COMPUTER SCIENCE (OCR)

At the heart of Computer Science is the ability to look at problems, analyse them, break them down and solve them in a way which involves a variety of “computational thinking” skills. This subject will develop and enhance critical thinking; looking at concepts in depth, analysing different views/perspectives, evaluating links and drawing own conclusions backed up with evidence. Programming is an essential part of Computer Science A level; Python, Visual Basic, Java and C# are among the scripting languages; building upon logical thinking and problem solving which is a highly crucial skill to master in any job/industry.



### WHAT DOES THE COURSE ENTAIL?

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Computer science provides a framework within which students can consider complex problems and apply computational methods to create effective and efficient solutions. The course will enable young people to analyse problems and critically evaluate solutions. Students are able to choose their own programming project and tailor the practical aspects of the A level to their own interest.

### ASSESSMENT/CONTENT COVERED:

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**Component 1 - exam:** Computer systems; types of processors, input, output, storage devices; systems and application software; software development; networks; web technologies; databases, data structures; Boolean algebra; legislation; legal and ethical considerations. This component is 40% of the overall grade.

**Component 2 – exam:** Algorithms and programming; thinking abstractly, thinking logically, thinking ahead, thinking concurrently, thinking procedurally and problem solving. This component is 40% of the overall grade.



**Component 3 – coursework:** Programming project – students are to create a computer program to solve a problem. This follows the program/software development life cycle; problem analysis, algorithm development, coding and documentation, testing, deployment and maintenance. This component is 20% of the overall grade.



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## **CAREER POSSIBILITIES – WHY STUDY COMPUTER SCIENCE?**

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It is an amazing time to be studying Computing. There are endless possibilities of career choices that Computing offer; jobs in high demand, global careers, working with people and solving problems in health, education, environment, security, research & development, manufacturing, tourism & transport and entertainment industry. IT and Computing is truly a large part of our daily lives; application of skills and knowledge is vital for enabling solutions to the following pressing, key issues:

- Climate change and energy
- Global economic issues
- Investment and research in technologies
- Ever changing employment demands
- Changing demands of a modern education system
- Health
- Cyber threats



## **EXTRA-CURRICULAR IN COMPUTING @ ST MICHAELS:**

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We attended the Artificial Intelligence –Youth summit 2023 at The Royal Institution with Year 13 students. Additionally, throughout sixth form there are trips and events organised at The National Museum of Computing at Bletchley Park.