



What will Year 12 students learn and how many lessons will they have each week?

Students will have 4 lessons a week. These are divided into:

2 lessons on the science of computers, how they work, how data is stored.

2 lessons where students will learn how to develop their own programs. Programming is an essential part of the A-Level and learning how to analyse and design, and then develop and test your own programs is key to a great grade. At A-level the techniques taught are those used in the world beyond school.

What will Year 12 students need to do to get the most out of their lessons?

Practicing the skills at home will require a Windows based laptop or pc. Programming requires a lot of resilience and therefore a substantial amount of practice. In addition you will need to read around the subject, watch programmes such as the BBC show 'Click' which can be found on iPlayer.

How much homework will Year 12 students have in this subject?

Students can expect at least 2 hours per week. One of which will be focused on the theoretical aspects of Computer Science and the other will be to help embed the skills the students are learning within the classroom

Which careers can this subject lead to?

Computer Science is a highly regarded subject which builds an understanding of problem solving. Obvious routes include system design and development, building applications and solutions across a wide range of industries, such as: aerospace and defence; agricultural services; financial services; healthcare; manufacturing; public sectors; retail and telecommunications.

Which other subjects complement this subject?

Any of the Sciences including Maths and Further Maths. Also common are Economics and Business. Business is especially relevant as almost every business today makes great use of computers to succeed in a highly interconnected world.

What programming languages will I learn

It is expected that you will already have some exposure to python (or another high-level language). In addition to this you will learn Microsoft VisualBasic in addition to having a knowledge of the use of SQL, JavaScript, HTML and CSS. For your project you can choose almost any high-level language with your teachers being confident in: C#, C++, Python, PHP.

How important is programming within the A-Level?

In your 2nd year you will be required to develop your own project. You will, with the guidance of your teachers, decide what problem you want to solve with computers. You will analyse and develop a solution. The project itself is worth 20% of the marks for the course. Whilst it is possible to get a reasonable grade without a good project, to get an excellent grade the project itself must be of sufficient complexity and quality. Your teachers will guide you through that process.

What if I can't program now?

Programming is a skill that can be taught. Your teachers are experienced at teaching this skill from the very beginning. Programming requires logical thought, what steps are required to solve a problem, and then translating those steps into instructions the computer can understand. We usually have about 2-4 students without previous programming experience and we work hard to ensure they are not disadvantaged. Usually they catch up very quickly.