**Computer Science**

Computing has become vitally important in all our lives. Computer systems affect most of the things that we do, for example doing business, controlling machinery, navigating planes, supporting administration and communicating with each other. We are still inventing new ways of using computers and coming to terms with what they mean to us. We refer to ‘information technology’ when talking about HOW computer systems are developed and used. Behind all this innovation there are basic principles that form the discipline of ‘computing’, the science and the mathematics needed to help us obtain a solution to a problem.

**The new qualification in Computer Science is here!**

We are excited to announce that the new Computer Science curriculum is well underway at All Hallows for both KS3 and KS4!

If you choose to study this subject you will get the chance to work in groups, problem solve, program on desktop machines and Raspberry Pi machines, build circuit boards and program them to work with coding you have written, study the science behind the computer, build your own app and look at the coding of popular games such as ‘Minecraft’.

**What you will study during years 9, 10 and 11**

During year 9 you will focus on developing skills and knowledge in Boolean (Binary Logic) and Binary, Denary, Hexadecimal conversion; as well as completing a scheme of work based on ‘Scratch’ programming software. You will learn the basics of coding with the text based language ‘Python’ and apply your experience and knowledge to complete exercises using ‘Minecraft Pi’ and ‘Codecademy’. You will learn how to set up and use the Raspberry Pi computer and work in groups to build a circuit board that can be controlled by it. You will complete a practice controlled assessment around Google’s ‘App Inventor’ where you get the experience of building your own app. If your app is good you may even be able to get it published on the Internet and take pride in people using an app YOU made!

As you move into year 10 and 11, you will further develop the skills and knowledge gained in year 9 through in-depth exam preparation involving the study of topics such as:

* **Fundamentals of computer systems**
* **Computing hardware and software**
* **Representation of data in computer systems**
* **Databases**
* **Computer communications and networking**
* **Programming**
* You will complete your controlled assessment task in year 10. This is a practical investigation requiring research, finding solutions to specified problems and how the scenario affects real – life or computing developments. This is worth 20% of your overall grade.
* **Written Exam-** Use all the knowledge you have acquired over 3 years of study to answer exam questions in a written paper to be taken in May / June of your final year. This is worth 80% of your overall grade.

**How will I be assessed and how will the qualification help me?**

* This qualification is now part of the E – baccalaureate qualification and is the future for ICT based qualifications.
* Software engineering, graphics, networks, databases, multimedia *and* artificial intelligence are some of the areas where career opportunities exist. Large organisations such as Disney, Google, Microsoft, Apple, NASA and George Lucas’s company, Industrial Light & Magic all currently have employees who have studied Computer Science.
* So what’s holding you back? Not the thought of hard work we hope!
* Instead of playing all those console games, why not learn how to develop your own?