

COMPUTER SCIENCE

COURSE OUTLINE Year 10 & Year 11

Aims of the course

In line with National Curriculum guidance, we aim to ensure that students:

- Acquire appropriate knowledge, understanding and research skills in preparation for the next stage of their education and beyond
- Develop creative, imaginative, enquiring minds with a willingness to take risks, learn from mistakes and improve exponentially
- Acquire skills relevant to adult life and the dynamically evolving technological world in which the students live
- Encourage high aspirations and independent work
- Develop high standards of literacy and numeracy to ensure equality of access to the curriculum and successful progression within and beyond education
- Develop and use ICT / Computer Science capabilities across a variety of contexts
- Develop personal and moral values, respect for shared values and for other cultures, religions and ways of life
- Appreciate human achievements, history of ICT & CS, key innovations and potential aspirations
- Take their place in society as informed, confident and responsible citizens

Homework

Homework tasks will be embedded within presentation slides. In y11 all homework will be dedicated to ongoing coursework

Assessment

Assessment includes self, peer and teacher review along with both formative and summative assessment as suggested in lesson-by-lesson plans within detailed schemes of work for each unit. The nature of the feedback given varies dependent upon task, purposes and individual student needs, at times featuring comments only, but will always give feedback for areas to improve upon for the future

Opportunities for teachers, parents and students to provide/access enrichment and further support beyond lessons

ICT related museum visits, independent reading, analysing and comparing different sources of information, researching key innovations and figures that created the ICT revolution, peer-assisted work, class discussions on social, moral and personal values

Lower School Teaching Staff

Peter Holl

Programme of study

<p>Autumn Term Term 1</p> <ul style="list-style-type: none"> • Staying Safe Online. How to stay safe online across multiple platforms in the modern digital age • Social Networks, Videogames, Forums/Blogs/Wikis • Cross-curricular links (including PSHE and values): behaviour; morals; crime and deviancy • Reactive and Proactive methods to staying safe • How to report any events to the right people • The origins of Computing and the Internet. The history of computing, related event and key innovations • Key figures in history across the world • Key innovations (Past, Present and Future) • Cross-curricular links to History • Benefits and limitations of the Internet 	<p>Autumn Term Term 2</p> <ul style="list-style-type: none"> • ICT & CS Basics. The origins and applications of encryption, binary, operating systems and various other topics • Codebreaking (Binary & Hexadecimal) • Types of PC, Peripherals and Operating Systems • Inside of a computer • History of Videogames • Databases Vs Spreadsheets • Advanced Computing (Moore's Law, Von Neumann Architecture) • Expert Computing (Inside of a computer, LMC, assembly code)
<p>Spring term Term 3</p> <p>Programming Theory & Coding. Understanding how to apply different computing languages</p> <ul style="list-style-type: none"> • Python • Java • HTML, CSS & Javascript • C++ • Codecademy • Coding shells 	<p>Spring term Term 4</p> <ul style="list-style-type: none"> • Website design. How to create a dynamic website • Reviewing existing website • Application assisted website design • Creating a website with expert features • HTML, CSS & Javascript • Animation & Design. How to create a stop motion or fully animated design (Adobe Flash & Fireworks) • Storyboarding • History of animation techniques • How to create expert animation • Self/Peer assessment
<p>Summer term Term 5</p> <ul style="list-style-type: none"> • Audacity. How to create and edit music • Enhancing existing audio tracks • Creating a custom audio track • Enhancing using voice and after-effects • Evaluating final project • Vidoremixing. How to create and edit both audio and video • Reviewing existing multimedia videos • Creating a custom video track • Importing audio track from previous task • Self and peer assessment • Improving based on feedback 	<p>Summer term Term 6</p> <ul style="list-style-type: none"> • Exam Revision • Revisiting previous exam papers • Self / Peer evaluation • Preparing for the coursework • Mock exam revision x 2 (Programing exam + Fundamentals) • Kodu. Creating a 3D interactive game • Reviewing existing projects • Improving upon current samples • Project – Create a 3D game