‘Whether you want to uncover the secrets of the universe, or you want to pursue a career in the 21st Century, basic computer programming is an essential skill to learn’. Stephen Hawking

We aim to provide our students with a rounded education so they are fully equipped to excel in a world in which computational thinking and creativity coupled with ICT skills are increasingly impacting on all aspects of our lives. We aim to ensure that every student has the understanding, awareness and skills to safely, enjoyably and effectively utilise digital tools and devices today and into the future

We aim to:

Provide enjoyable and challenging lessons that promote a love of Computer Science and foster a desire to learn more

Enrich and extend students as both independent and collaborative learners

Encourage the flexibility and openness of mind necessary to adjust to, and take advantage of, advances in technology, whilst understanding the moral, social and ethical implications and consequences for both individuals and society

Ensure all students are aware of the dangers as well as the opportunities ICT & Computer Science affords and consequently adopt sensible e-safety practices

**KS4 (GCSE in years 10 & 11)**

GCSE Computer Science is taught in 5 lessons a fortnight with each lesson lasting 50 minutes.

GCSE Computer Science is an optional subject for students in KS4 and students study the AQA Computer Science GCSE 8520. This is assessed through two examinations (both are 90 minutes long at the end of year 11) worth 50% each. Students also have to compete a practical programming project undertaken over 20 hours during year 10 and year 11 using the programming language Python 3.

For those starting their GCSE course in Year 10 of September 2020 onwards the structure of assessment is being changed and we are currently awaiting details from the examination boards on what these changes will be.

All KS4 students use Python 3 which is available to download for free from www.python.org – where it is possible to do so, students find it very helpful to have Python 3 installed on a computer at home.

**How can parents help?**

Parents should not feel under pressure to provide any specific hardware/software as there is provision at lunchtime to meet pupils’ needs. However, some homework will require internet access and access to a PC, therefore, if this not available at home, students will have to complete such homework at lunchtime.

If students have access to a computer to complete homework then having access to office applications is very useful. In school we currently use Microsoft Office 2013 but this is compatible with a range of office software so the version available at home need not be the same. There are also some free to download open source office suites available on the internet. All students have their own school Google account which gives them access to Google docs which can be used for individual and collaborative work both at school and home as long as internet access is available. This allows students to work on tasks without parents needing to purchase or download any new software.

Students all learn computer programming and having software on a computer at home which they can practice on is particularly useful:

Scratch is used in years 7 and is available to use online at http://scratch.mit.edu/

Python 3 is used in years 8 to 13 and is available to download for free from python.org Make sure to download a version of Python 3 such as Python 3.7.5 (not Python 2) as we use Python 3 in school.

All students have access to Moodle, our VLE and if internet access is available at home they should be encouraged to use Moodle to access work and additional resources provided by the teacher.

Students undertaking examination courses in KS4 and KS5 have a course text book but a wide range of additional electronic resources are available to help them via their Computer Science Moodle course – students use these resources in lessons and should be encouraged to use them regularly at home as well. Some of the resources can be downloaded onto computers at home whereas others require access to the internet whilst they are being used.

All students have their own school Google account which gives them a school email account which should be used for all school related email communication – students should not be using personal email accounts in school

**Where next:**

The purpose of the current Computer Science provision is to provide a sound basis in both computer literacy and application of ICT to practical situations. This should give students enough grounding to function effectively in the modern day workplace, and to be able to take their studies further should they wish to undertake a degree or follow a specific career in Computer Science.

The applications of Computer Science are enormous, and cover just about every aspect of modern day life both in and out of the workplace. Most of us now carry a small but powerful computer with us wherever we go (our mobile phone) and also rely on computer systems without thinking about it when going about our everyday lives whether it be…

* Using the checkout system at the supermarket (a computer system)
* Relaxing in front of our digital tv (a computer system)
* Using an ATM to withdraw money from the bank (a computer system)
* Having an MRI scan at hospital (a computer system)
* Following directions on our SatNav (a computer system)
* …the list goes on and on

Understanding more about how these computer systems work and learning to write programs to use and control them is thus clearly beneficial. However, studying Computer Science is more than this, in particular it develops a range of transferrable skills including problem-solving, critical thinking and analysis. These are skills needed in many careers including engineering, science, medicine, financial and resource management careers.

**Opportunities out of lessons:**

There are currently 5 computer suites, which are variously available for students to use at lunchtime to complete work.

All students have access to Moodle, our VLE and if internet access is available at home they should be encouraged to use Moodle to access work and additional resources provided by the teacher.

All students have their own school Google account which gives them a school email account which should be used for all school related email communication – students should not be using personal email accounts in school. The Google account also gives access to Google docs which can be used for individual and collaborative work.

We run a Computer Science lunchtime club providing a range of opportunities beyond the curriculum including the chance to extend programming skills beyond the time available in timetabled lessons.

Curriculum

Our schemes of learning are designed to provide a broad and balanced curriculum that enables all students to develop into increasingly independent and discerning learners, creators and users of digital systems and content. We aim to offer a Computer Science education that equips all students to use computational thinking and creativity to understand and change the world thus our schemes of learning both challenge and support students to promote high achievement for all of them in relation to their ability. We want our students to gain not only a high level of skills but also the understanding to be able to transfer these skills effectively into all aspects of their lives.