Queen Elizabeth's ACADEMY

Curriculum Rationale

Computing

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April 2021

Diverse Academies

Introduction

The computing department aims to prepare our leaners for their future by giving them the opportunity to develop the knowledge and key skills that will equip them to be successful in today's ever-changing digital world. The increasing use of technology in our everyday lives makes the acquisition of this knowledge increasing important for our learner futures, both at home and for future employment.

Christian Distinctiveness

In Computing, we explore Christian Distinctiveness in various ways. Students and teachers have regular discussion about QEA's nine core values and those who demonstrate them in class are praised and celebrated. Students demonstrate their ongoing knowledge and wisdom throughout the year. Students are encouraged to show nurture towards others, honesty and truthfulness while working as a class and an individual.

Good Manners are none-negotiables in Computing.

Knowledge in computing

The Computing department has a carefully considered Five Year plan. Each step of the Five Year Plan is advanced so that students are appropriately and proportionally challenged during each phase. We start developing key knowledge for GCSE from Year 7 onwards. Our Computing curriculum focuses on the acquisition of knowledge from three key strands; digital literacy, computing and online safety.

Operating alongside the Five Year Plan are Fine Level Sequences in all topics taught in the curriculum. These inform teaching staff of what students must be taught in order to give them the best experience possible and to ensure that progress is made by all students. Fine Level Sequences identify the core knowledge required in each topic. To supplement this core knowledge, all students are provided with Knowledge Organisers to further enhance their understanding in each activity (also used to complete topic based homework tasks).

At the start of all lessons, students engage in Interleaving Knowledge Recall activities. These activities vary as to prevent tedium and may include blank page retrieval tasks, quick fire questioning and quizzes (amongst alternatives). Students are expected to recall information not only from the previous lesson but from previous weeks or even the previous year as a means to challenge and retain information in both the short term and long term memory.

Digital literacy focuses on knowledge that will be necessary in everyday life. It will focus on developing online research skills, evaluation of suitability and reliability of sources. It will increase knowledge of key pieces of software including word processing, spreadsheets, databases, presentation software, alongside website development, sound editing and animation skills. This is knowledge that learner will need to be successful in whatever career they chose to pursue.

Computing focuses on knowledge that is necessary to access any career in the rapidly growing area of computer science and software development. It focuses on the key areas of Algorithms, Programming skills using more than one language, Boolean logic, Computational abstractions, representation of images & sounds and binary mathematics.

Online safety focuses on knowledge that evaluates ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns. The todays digital world it is vital that are learner understand how to keep themselves safe while using technology.

Our Key Stage 4 curriculum strategy has been devised to maximise the potential of all pupils regardless of ability. This is why we offer both GCSE Computer Science and OCR Creative i-Media to allow students to deepen the knowledge acquired in key stage 3 and develop their chosen strand with the subject area.

Careers and Aspirations

Students have the opportunity to study Computer science at GCSE level in Key Stage 4. This offering has been in the curriculum for the past few years and is providing a popular pathway.

By studying this qualification at QEA, students are ideally suited to go on and study A-level Computer Science in Key Stage 5. This could then lead to one of many Computer Science related degrees courses including Bsc Computer Science, Bsc Computer games programming, Bsc Cyber security, Bsc Information technology.

The pathway can then lead onto postgraduate studies including courses such as Msc Computer Science. Msc Cyber Security or Msc Information technology to mention a few. This could be followed by a PGCE in Computing should they wish to pursue a career as a teacher of Computer science.

Further and higher education studies and apprenticeships could lead to a career elsewhere in the Computing industry. For example, Computer Games Programmer, Software Development, Cyber Security Expert, Network Management and Website Designer to mention a few.

Overview of curriculum plan

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Stage 3	Rules & Regs Spreadsheets Python Turtle Databases Legislation	Online awareness Website development Advanced Spreadsheets	Algorithms and Logo programming Python programming unit 1 &2	Databases Programming Mircobit Online awareness 2 Advanced databases	Programming HTML Programming Scratch Representing images and Sounds	Video & Sound editing Binary and Logic Spreadsheets Networks & Security

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Key Stage 4	System Architecture Algorithms	Memory and Storage Programming fundamentals	Computer networks Producing robust programs	Computer security Boolean logic	System software Programming languages and IDE	Ethical, legal, cultural and environmental impact Revision exercises