

## **Buckler's Mead Academy**

### **Computing - Subject Information**

***“Whether you want to uncover the secrets of the universe or you just want to pursue a career in the 21st Century Computer programming is an essential skill to learn.” Stephen Hawking***

Computer Studies aims to prepare students for a world outside of the classroom that enables them to work and live in an environment that revolves around working with, maintaining and manipulating computer resources. Students also need to know how to be safe and work effectively with computers in a rapidly changing and developing landscape.

Our programmes of study aim to develop learner's knowledge, skills and understanding of key computational concepts and experience. We believe that all students can be successful in the world of computer and digital technology.

Our curriculum covers the following Pillars of Progression- Information Technology, Computer Science and Digital Literacy. This builds on knowledge that should have been gained at KS2 including basic programming skills, understanding of networks, sequence selection and iteration and use of a variety of software. Our aim is to ensure that all students develop a depth of knowledge of computer science whilst building awareness and knowledge of Information Technology in the world around them.

The KS3 curriculum aims to ensure learners have sufficient knowledge to stay safe online and use computers safely in life. It also provides a focus on developing resilient learners who are able to recover from mistakes and effectively solve problems. By the end of Key Stage Three all students become able users of ICT, knowledge of how to use, interrogate and programme computers, an awareness of their digital footprint and its impact, and how to be safe in an ever changing digital climate.

#### **Key Stage 3**

Students start the curriculum looking at computational thinking and generic competencies. Students develop a basic understanding of the composition and workings of a computer.

A spiral curriculum is used to incrementally develop students' knowledge across the 3 components so that students can know, understand and do more in each year.

Students have access to Ambition Tasks and a workbook at any time to develop knowledge of opportunities both in the locale and further afield and as a department we have developed strong links with the Royal Logistics Corps and Thales to give our students the widest possible breadth of knowledge and options to make informed decisions about their future.

Students have two possible routes at KS4; Creative iMedia and GCSE Computer Science. Both qualifications prepare for the next stages with regard to the BTEC and A Level Computer Science.

GCSE Computer Science is targeted towards the more able and the Creative iMedia course is focused towards those students who prefer a vocational approach to learning.

The curriculum builds on prior learning from KS3 specifically when studying problem solving and programming in GCSE Computer Science.

The year 9 curriculum has also been changed to to include an Introduction to Business and how business and computing are inextricably linked.

Our KS4 curriculum is designed for students to develop the mind-set of a computer scientist built upon the foundations at KS3. Learners have the opportunity to develop their capability, creativity and knowledge in computer science, digital media and information technology.

#### **Key Stage 4**

Students have two possible routes at KS4; Creative iMedia and GCSE Computer Science. Both qualifications prepare for the next stages and qualifications. GCSE Computer Science is targeted towards the more able and the Creative iMedia course is focused towards those students who prefer a vocational approach to learning. The curriculum builds on prior learning from KS3 specifically when studying problem solving and programming in GCSE Computer Science.

Our curriculum in both key stages prepares students for employment through problem solving skills which are considered throughout the course and getting students to use their key skills to offer solutions to some contemporary global challenges. In addition, where students have completed fieldwork and data analysis, it allows students to develop key transferable skills which are required for further education and vital employment skills. To improve writing fluency we use structure strips in lessons to guide extended writing answers of the type that will be faced in the examination.