

**Computing.**

**Intent – what we want to achieve.**

The computing curriculum provides high quality computing education that equips students to use computational thinking and creativity to understand and be able to contribute to the rapidly changing world.

Students develop an understanding and application in the fundamental principles and concepts of computer science by having the opportunity to write programs, design webpages and produce professional digital products to evaluate and analytically solve problems. Students will understand the digital age that we are in and be responsible, competent, confident, and creative users of information and communication technology.

The KS3 Curriculum is designed to build upon students’ understanding of computing from KS2. For example, students will learn about being safe online at KS2 and will build upon this at KS3 and learn about collaborating safely online with others. KS4 Curriculum is cyclical giving students' ample opportunity to build upon previous knowledge and prepare them for the requirements of the GCSE examination. This prepares students to study computer science at A-Level or other post 16 options. Some students may choose to take on an apprenticeship or employment and learning to program using python 3 gives students skills and knowledge beyond kS4.

To create <i>aspirational citizens</i> , our curriculum is:	To create <i>successful learners</i> our curriculum is:	To create <i>leaders and communicators</i> our curriculum:
<ul style="list-style-type: none"> <li>• relevant and interesting.</li> <li>• rich in skills and knowledge. For example, students learn various programming languages such as Scratch, Edublocks and text based programming such as Python.</li> <li>• challenging for all.</li> </ul>	<ul style="list-style-type: none"> <li>• considerate of KS2 learning.</li> <li>• sequenced so that skills and knowledge are built up over the key stages. For example, in Year 7 students learn programming with Scratch and then can apply the principles of programming learnt and apply to new context of using micro: bits.</li> <li>• designed to develop literacy, oracy and reading skills.</li> <li>• based on good quality lesson planning and excellent resources which are accessible for all.</li> </ul>	<ul style="list-style-type: none"> <li>• develops skills in team working, communication and creative problem solving.</li> <li>• promotes diversity and inclusion. In Year 7 we learn about women in computing such as Grace Hopper, Ada Lovelace and Katherine Johnson.</li> <li>• allows students to develop their own ideas and express their opinions.</li> </ul>
<p>Students have opportunities to:</p> <ul style="list-style-type: none"> <li>• learn about concepts in computer science.</li> <li>• Investigate a variety of programming tools which reinforce key programming concepts.</li> <li>• Learn beyond the classroom.</li> </ul>	<p>Students have opportunities to:</p> <ul style="list-style-type: none"> <li>• work individually and in groups.</li> <li>• be creative in both practical and theory work.</li> <li>• build up confidence and self-esteem in practical skills as well as in reading, speaking and literacy.</li> <li>• aim high and make improvements to their written and practical work (programming). In KS4 students continue to learn to program with python and build upon the basic programming concepts learnt in Year 9.</li> </ul>	<p>Students have opportunities to:</p> <ul style="list-style-type: none"> <li>• take part in class discussions and express their own ideas.</li> <li>• develop programming and analytical skills.</li> <li>• make decisions for themselves. For example, when programming in KS3 &amp; KS4 students can predict what the outcome of the programming code would be.</li> </ul>

**Implementation – how we achieve it.**

- Well-designed schemes of learning that have been mapped out using the National Curriculum framework and the GCSE specification.
- High quality lesson planning and resources produced by subject specialist, adapted to the needs of individuals and groups of students.
- Personalised intervention so all students are supported to make progress.
- Well planned assessment points throughout the academic year to inform future lesson planning.
- Excellent teacher / student relationships.

**Impact – how we know we have been successful.**

Student voice shows that a high percentage of students enjoy lessons.  
 Work in students' books shows that they value learning in this subject and are making progress.  
 Lesson observations and learning walks show that lessons are well planned and that students are making progress.  
 An Increase in the number of students opting to take the subject at GCSE.

#### SMSC Statement.

##### **Social-**

Students work together as a team/group and carry out peer assessment with constructive criticism, for example in Year 7 when students learn about collaborating safely online. Discussion and communication of ideas feature in every lesson as does learning to respect each other's working space.

##### **Moral-**

Students are encouraged to always try to do what's right and take responsibility for your own actions. For example, in Year 9 Cyber Security and learning about Computer Misuse act and Data Protection Act,

##### **Cultural-**

Taking an interest in the culture and beliefs of others and sharing ideas and experiences from their own culture validates a sense of personal and cultural identity as well as an understanding and tolerance of others' beliefs. For example, students in Year 9 learn about the cultural impact of technology and the digital divide.

##### **Spiritual-**

Students are free to express their own opinions and encouraged to contribute to class discussions. For example, in Year 8 students learn about their digital footprint and how that impacts reputations online.

#### Equality, Diversity and Inclusion (EDI) in the Curriculum.

The curriculum is designed to support students from all backgrounds and to encourage them to see themselves as future programmers and analysts by including examples of computing experts who reflect our student body for example EduBlocks was developed by Joshua Lowe, a 14-year-old Python developer from the United Kingdom. Protected characteristics are included in a range of topics for example: Women in computing, digital divide, cultural and ethical impact of technology.

#### British Values in the Curriculum.

##### **Democracy**

Students can consider the views and values of others when discussing units of work. At KS4 Students are given opportunity to express their opinions in group and written work e.g. ethical, cultural and environmental consideration.

##### **Rule of law**

Students are expected to follow school expectations and working in a classroom. Students work in a computing lab ensure that they work safely with the computers and follow guidelines. Students learn about programming fundamentals, algorithms, and legal impact of technology. They understand the consequences of their actions through use of the behaviour and rewards system and regular reiteration of the BGGs way.

##### **Tolerance of other religions and those with no religion**

There is opportunity to consider concepts such as Ethical and Cultural impact for example considering religion and impact of technology on medicine. Understanding of the influence of different faiths and beliefs in some decisions which impact on use of technology.

##### **Respect and mutual respect**

Students are expected to show mutual respect to one another when presenting different ideas and viewpoints during peer assessment and class discussions.

##### **Individual liberty**

Students can express their own individuality through units of work and are given opportunity to make their own decisions and choices to responses and viewpoints to higher tariff questions and programming questions which require analysis and evaluation.

#### Careers in the Curriculum.

Students are introduced to a wide range of jobs and careers that are linked to each topic. For example: careers in Ministry of Defence, Cyber security, programming, web developing, software developing, Data Analysis, Network developing. Lesson slides with career choices, salaries and qualifications needed are shown and discussed.

A corridor display shows of a wide range of possible career options and college and university courses that are available.