Whole School ~ Computing

'I am not in competition with anyone but myself. My goal is to improve myself continuously.' Bill Gates

Intent - We believe that all pupils have the right to have rich, deep learning experiences that balance all the aspects of computing. With technology playing such a significant role in society today, we believe 'Computational thinking' is a skill that pupils must be taught if they are to be able to participate effectively and safely in this digital world. A high-quality computing education equips pupils to use creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and web-based systems.

Our Computing Curriculum places emphasis on a combination of skills and knowledge. The curriculum is split into three main areas: Computer Science, Internet Technology and Digital Learning, with e-safety running though all areas. Pupils are taught how computers work, how to write algorithms and solve problems, culminating in the creation of computer programs. 'Computer Science' involves using logic and ideas about systems, patterns, abstraction and decomposition. Within the 'Internet Technology' strand of the curriculum, pupils learn how computers can be used to represent and manage data. The 'Digital Learning' element involves our pupils interacting with digital information safely and responsibly, with a strong emphasis on e-safety.

A clear progression of skills is planned to meet National Curriculum 2014 requirements – see Computing Progression of Skills document. Through the curriculum areas of Computer Science, Information Technology and Digital Literacy our pupils will develop their understanding of e-safety, programming, handling data, multimedia technologies and of the technologies in their own lives. This ensures they become digitally literate so that they are able to express themselves and develop their ideas through information and computer technology– at a level suitable for the future workplace and as active participants in a digital world. We have an E- Safety Policy that provides guidance for staff and pupils about how to use the internet safely.

Implementation - Computing is planned as part of our spiral curriculum. This ensures that the pupils are able to progressively build their skills as they both revisit prior learning and explore new learning. As part of the planning process, teachers plan the following:

- A cycle of lessons for each subject, which carefully plans for progression and depth;
- Challenge questions for pupils to apply their learning;
- A knowledge organiser which outlines knowledge (including vocabulary) all pupils must master;
- Trips and visiting experts who enhance the learning experience;
- Development of knowledge in order to use technology responsibly and safely by recognising acceptable and unacceptable behaviour and identify a range of ways to report concerns about unwanted contact or content.

As pupils become more confident in their abilities in Computing, they will become more independent and fundamental life skills such as problem-solving, logical thinking and self-evaluation become second nature to them.

We use the Purple Mash scheme of work for Reception to Year 4, ensuring consistency and progression throughout the school. The Purple Mash scheme enables clear coverage of the computing curriculum whilst providing support and CPD for teachers. Lessons are broken down into weekly units, usually with two units taught per half-term. Units are practical and engaging and allow computing lessons to be hands on. Units cover a broad range of computing components such as coding, spreadsheets, internet and email, databases, communication networks, touch typing, animation and online safety. Our teachers make

powerful cross curricular links and deliver computing lessons thematically which can follow the child's interests and provide flexibility. Pupils use laptops, desktops, iPads, cameras and robots in groups and independently. Pupils in Key Stage Two attend coding festivals at local independent schools to further embed their knowledge and skills. Computing homework for older pupils ensures our future coders and programmers are given the opportunity to extend their learning beyond the classroom.

Impact - Our Computing curriculum is high quality, well thought out and is planned to demonstrate progression. If pupils are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes to ensure that pupils are responsible, competent, confident and creative users of information and communication technology;
- Pupils can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
- Pupils can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems;
- Pupils can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
- A celebration of learning for each term which demonstrates progression across the school;
- Pupil discussions about their learning;
- Tracking of end of topic progress using the school's foundation assessment to ensure gaps are closed and progress through the curriculum in each year group is sustained, this is monitored by the computing co-ordinator.