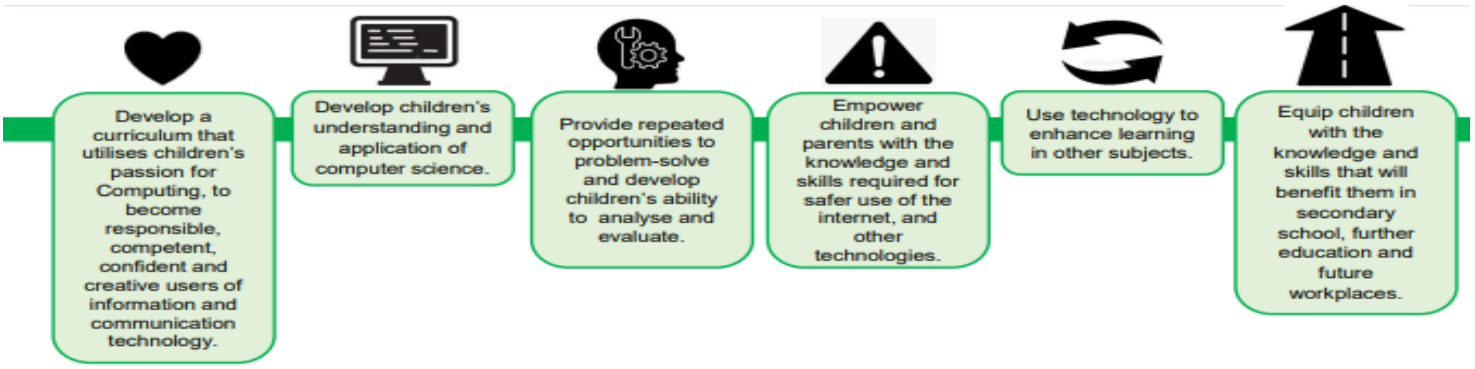
Computing

‘The Lovelace Way’

Curriculum Intent, Implementation and Impact Document

Intent

At Lovelace Primary School we have adopted the Kapow Computing scheme which is designed to cultivate a positive and engaging experience with technology, fostering in pupils an appreciation for its diverse capabilities and the opportunities it presents for creation, management, organisation, and collaboration. Crucially, the curriculum emphasises the development of responsible online citizenship.



A core intent of the Kapow scheme is encouraging experimentation with software and programs, thereby building pupils' confidence in navigating unfamiliar technologies—a vital skill in today's rapidly evolving technological landscape. Our ultimate aim is to equip children with lifelong skills that will enable them to thrive in a technology-driven world, including future employment opportunities. This is achieved through a mastery-based curriculum, which prioritizes the acquisition of deep, long-term, secure and adaptable understanding of computing concepts. This mastery is demonstrated by the application and transfer of computing skills and knowledge across other subjects, such as analysing data, presenting information, or creating reports in non-computing contexts. We believe this approach prepares children to “Learn Together and Succeed forever.”

The scheme of work is designed to ensure pupils achieve the Key Stage attainment targets specified in the National Curriculum. Its aims are fully aligned with the National Curriculum objectives.

The computing curriculum emphasises a progressive development of skills across several key strands:

- computer science
- data handling
- communication
- multimedia
- digital literacy
- research.

This comprehensive approach aims to equip pupils with the competence and understanding necessary for safe and effective engagement with information technology. Instruction within each strand fosters curiosity, innovation, and preparedness for the evolving digital landscape, with an emphasis on real-world applications. While computing is integrated across the curriculum, its connections are particularly evident in mathematics, PSHE, science, and design and technology, providing insights into both natural and artificial systems.

Implementation

Our computing curriculum is meticulously designed to foster inclusivity and holistic child development, recognising and nurturing the unique potential of each student. We strive to motivate and challenge every pupil, encouraging each child for their individual growth.

The curriculum is structured around the Kapow scheme of work, fully aligned with the National Curriculum objectives (2014). While computing is taught as a discrete subject, its principles are actively integrated across the curriculum. For instance, algorithmic thinking and data analysis are applied within mathematics and science, while search engines and multimedia tools are employed for research and content creation in history, geography, art, DT and English. Furthermore, students are encouraged to utilize word processing software and presentation design tools in various subjects across the curriculum. These cross-curricular connections enhance student engagement, facilitate knowledge retention, and demonstrate the practical applications of computing skills in diverse contexts. From Year 2 onwards, homework is assigned and completed via Google Classroom.

The Kapow Primary scheme of work is designed with three strands which run throughout, these include :

- Computer science
- Information technology
- Digital literacy

The Kapow Primary scheme is organised into five key areas, creating a spiral curriculum through which pupils can develop their computing knowledge and skills by revisiting and building on previous learning each year:

- Computer systems and networks
- Programming
- Creating media
- Data handling
- Online safety

The implementation of Kapow Primary Computing ensures a broad and balanced coverage of the National curriculum requirements, and our 'Skills showcase' units provide pupils with the opportunity to learn and apply transferable skills.

Lessons incorporate a range of teaching strategies from independent tasks, paired and group work as well as unplugged and digital activities. This variety means that lessons are engaging and appeal to those with a variety of learning styles. Differentiated guidance is available for every lesson to ensure that lessons can be accessed by all pupils with opportunities to stretch pupils' learning are available when required.

Knowledge Organisers

Knowledge organisers for each unit support pupils in building a foundation of factual knowledge by encouraging recall of key facts and vocabulary.These are sent home so that parents and carers can reinforce key vocabulary and discuss new learning.

Teacher Subject Knowledge:
Strong subject knowledge is vital for staff to be able to deliver a highly effective and robust computing curriculum. Each unit of lessons include teacher videos to develop subject knowledge and support ongoing CPD. Further CPD opportunities can also be found via our webinars with our Computing subject specialists. Kapow has been created with the understanding that teachers, who have varying levels of confidence, deliver the computing curriculum, therefore every effort has been made to ensure that they feel supported to deliver lessons of a high standard that ensures pupils make progress.

Inclusion
At Lovelace, our computing curriculum is designed to be inclusive and developmentally focused, nurturing, motivating, and challenging each pupil as an individual. We aim to develop the whole child by fostering depth in knowledge and skills within each computing topic. Our robust resources support this aim, encompassing a range of devices including laptops, PCs, Chromebooks, an iMac, a Macbook, iPads, interactive whiteboards, interactive drawing tablets, a green screen, a digital SLR camera, podcasting equipment, and other innovative technologies. This diverse equipment ensures all year groups have access to various tools and programs for diverse purposes across the curriculum. Each child is provided with a unique school online (USO) login and access to a personal Google education account.

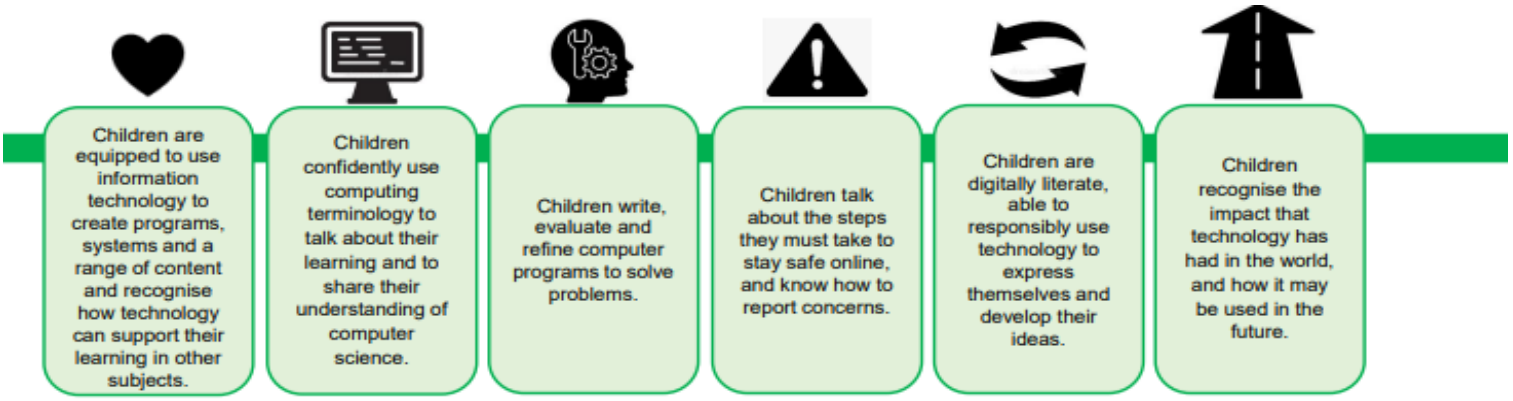
Online Safety
Digital literacy is a cornerstone of our computing curriculum, recognising the daily interaction children have with online devices. At the beginning of each academic year, we provide age-appropriate and progressive instruction on the safe and considerate use of technology. Acknowledging the evolving nature of technology, this instruction is delivered discreetly and responsively, adapting to current digital trends and issues.

Digital literacy is integrated with Personal, Social, Health and Economic (PSHE) education, facilitating cross-curricular learning throughout the year. Lovelace pupils understand how to maintain online safety, and dedicated Internet safety days reinforce this understanding, addressing current issues and promoting safe practices. We strive to ensure that all children at Lovelace develop into responsible digital citizens.

Strong Vocabulary Development
Key vocabulary is mapped out and explicitly taught in every lesson. The development of vocabulary encourages children to discuss technology with confidence.

Lovelace 'Wow' Opportunities:
Every year the children will be given the opportunity to experience a computing 'wow' enrichment activity, this might include one of the following: a workshop from a visitor; visit to an IT exhibition; enter a computing competition; create an exhibition for parents or use technology to enrich another subject.

Impact



Our Computing curriculum is a high-quality, spiral curriculum designed to demonstrate clear progression and equip students for future success. We are committed to inclusivity and the development of the whole child, recognising each student as an individual and providing a nurturing, motivating, and challenging learning environment. We actively promote creativity, experimentation, and enjoyment within our computing program, providing opportunities for students to showcase their work and engaging parents and carers through platforms like G Suite and Google Classroom.

Student achievement and success in computing are regularly celebrated through classroom visits, student interviews, and work samples. This approach allows us to effectively measure the impact of our curriculum and reflect on the knowledge and skills acquired by our students.

Our curriculum aligns with the National Curriculum (2014) objectives, ensuring that students:

- Develop a strong understanding and application of fundamental computer science principles and concepts, including abstraction, logic, algorithms, and data representation.
- Gain proficiency in analysing problems computationally and develop repeated practical experience in writing computer programs to solve these problems.
- Learn to evaluate and apply information technology, including new and unfamiliar technologies, analytically to address challenges.
- Become responsible, competent, confident, and creative users of information and communication technology.

Assessment

The impact of Kapow Primary's scheme is constantly monitored through both formative and summative assessment opportunities. Each lesson includes guidance to support teachers in assessing pupils against the learning objectives and each unit has a unit quiz and Knowledge Catcher which can be used at the start and/ or end of the unit.

After the implementation of Kapow Primary Computing, pupils should leave school equipped with a range of skills to enable them to succeed in their secondary education and be active participants in the ever-increasing digital world.

The expected impact of following the Kapow Primary Computing scheme of work is that children will:

- ★ Be critical thinkers and be able to understand how to make informed and appropriate digital choices in the future
- ★ Understand the importance that computing will have going forward in both their educational and working life and in their social and personal futures.
- ★ Understand how to balance time spent on technology and time spent away from it in a healthy and appropriate manner.
- ★ Understand that technology helps to showcase their ideas and creativity. They will know that different types of software and hardware can help them achieve a broad variety of artistic and practical aims.
- ★ Show a clear progression of technical skills across all areas of the National curriculum - computer science, information technology and digital literacy.
- ★ Be able to use technology both individually and as part of a collaborative team.
- ★ Be aware of online safety issues and protocols and be able to deal with any problems in a responsible and appropriate manner.
- ★ Have an awareness of developments in technology and have an idea of how current technologies work and relate to one another.
- ★ Meet the end of key stage expectations outlined in the National curriculum for Computing.