Computing

INTENT

Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. Our computing curriculum will give all children the opportunity to become successful learners, through exploring the breadth and depth of the national curriculum and to learn within a coherent, carefully sequenced and progressive framework. The core of Computing is computer science, in which children will be taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. They will develop a rich and in-depth subject knowledge, developing new knowledge and skills through a variety of interesting contexts, which will enable them to see clear links between different aspects of their learning. Building on this knowledge and understanding, pupils are equipped to use information and technology to create program, systems and a range of content. Our children will develop and demonstrate their creativity and will experience the challenge and enjoyment of learning. They will be helped to understand the purpose and value of their learning to see its relevance to their past, present and future. Computing will also ensure that children become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

"A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world."

Children will:

Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation;
Analyse problems in computational terms, and have repeated practical experience of writing computing programs to solve such problems;
Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems;
Become responsible, competent, confident and creative users of information and communication technology;
Explore different beliefs, experiences, faiths, feelings and values towards other areas of Computing;
Enjoy learning about the work of others around them and the surrounding world;
Use imagination and creativity when working and will be encouraged to reflect on their experiences;
Learn to appreciate cultural influences in Computing and use this learning to inform their work;
Understand, accept, respect and celebrate diversity in Computing.

Our Computing curriculum will:

- Give children the opportunity to use a range of social skills to make a positive contribution to the local community and beyond;
- Allow children to appreciate diverse viewpoints about information and communication technology throughout the ages; participate, volunteer and cooperate when working collaboratively; and resolve conflict, when it arises;
- Show children how to respect and tolerate the opinions of others;
- Be part of a system where everyone will be free to express views and ideas.
- Will allow children to learn in a peaceful and supportive environment where they will get to work in a range of groups and settings, build respectful friendships and recognise that people are good at different areas in across the information and communication technology spectrum. Children will learn how to respect themselves and others and to develop their self-esteem and confidence in their abilities. They will reflect and think mindfully about their learning and will be encouraged to follow their interests and to be themselves;
- Give children the opportunity to express their opinions on a range of different computing movements. They will take part in age-appropriate discussions and make choices about the work that they complete. Children will be asked to share what they like and dislike about their learning and will be invited to contribute to the planning of their learning journey. All children will be encouraged to make a positive contribution to the school and local community and explore ways of using outcomes to become a responsible global citizen;
- Be taught through a pedagogy that excites, promotes and sustains children's interest, enabling and fostering their natural curiosity. They will be offered a memorable experience at the start of every topic and will learn how to problem-solve, how

to be creative and how to communicate. Our computing curriculum will enable the children to reflect on and evaluate their learning and will promote their innovation;

- We will enrich our computing curriculum by using quality resources in and out of the classroom as well as offering opportunities for the children to learn outdoors. We will provide on and off-site subject or topic related activities. It is important for us to welcome parents and carers to take part in children's learning and experiences, and we will develop partnerships with external providers that extend children's opportunities for learning.

IMPLEMENTATION

Our Computing curriculum is taught in blocks throughout the year so that pupils can achieve depth in their learning. Through their work in Computing, pupils are consistently taught about e-safety and how to remain safe whilst online. This knowledge is also repeated throughout the wider curriculum, where pupils have access to technology.

Key computing knowledge, skills and vocabulary have been carefully mapped across all year groups to ensure progression between year groups. As a result, pupils learn about real-life computing-specific examples as well as developing their skills throughout the programme of study.

Units of work in Computing have been deliberately planned in a progressive way to deepen pupils' knowledge and understanding of different areas of technology; this will ensure that all pupils are digitally literate. Through a logical sequence of lessons, pupils can make links, transfer knowledge and content from previous learning to build on their understanding.

The steps are constructed to include careful scaffolding to ensure that pupils develop secure knowledge and skills to understand key concepts and strategies that are continued to be built upon throughout the year or key stage. Discretion is used by teachers in the effective use of differentiation. Where possible, 'real-life' links are used to help prepare the pupils for modern Britain and the wider world. Our Computing curriculum develops pupils as 'responsible, active digital citizens´ as well as securing the knowledge, understanding and skills required for the future workplace.

Our Computing curriculum is delivered through a well-embedded, successful range of teaching strategies, similar to those in other foundation curriculum subjects. Pupils are confident in the routines, procedures and approaches to teaching; as a result, they are more receptive to the knowledge-based content of the Computing curriculum, new and challenging subject vocabulary and the planned opportunities to make links between units of work.

Our Computing curriculum is tailored and adapted to suit the individual needs of each year group. This allows us to ensure that all pupils are keeping up with the curriculum, therefore making good progress. Our skills progression enables us to ensure that pupils' scientific understanding is consistently being built upon, as it provides a clear, differentiated structure. We monitor pupils' outcomes across each Computing unit as they move throughout the school.

The Computing Subject Leader is responsible for monitoring the curriculum, including the development of medium-term and short-term planning, as well as the standards within the Computing files. Also, the Computing Subject Leader evaluates the Quality of Education for each year group by lesson visits, scrutiny of pupil s' work and pupil discussions; this provides key strengths and areas of development for Computing curriculum. Within our professional development procedures, the Computing Subject Leader is given training and the opportunity to keep developing their subject knowledge, skills and understanding; as a result, they can support curriculum development and their colleagues throughout the school. During the academic year, regular INSET training is provided to disseminate new information, ensuring all staff are updated with relevant changes within Computing; as a result, teachers will deliver the best Computing curriculum and provision for all pupils in their care.

IMPACT

The following outcomes are a result of our Computing curriculum and wider provision:

key knowledge and skills in the three main areas of the computing curriculum:

- computer science (programming and understanding how digital systems work)
- information technology (using computer systems to store, retrieve and send information)
- digital literacy (evaluating digital content and using technology safely and respectfully).
- develop as 'responsible, active digital citizens´
- excellent understanding of e-safety and how to remain safe and respectful online.
- use and apply Computing knowledge and skills across foundation curriculum subjects.
- an understanding of the importance of Computing and technology in the wider world beyond school
- from research methods, use of presentation and creative tools and critical thinking, Computing will offer pupils the building blocks that enable them to pursue a wide range of interests and vocations in the next stage of their lives.
- awe and wonder around the amazing and fascinating world of Computing and technology
- developing an enjoyment and pleasure in learning about Computing