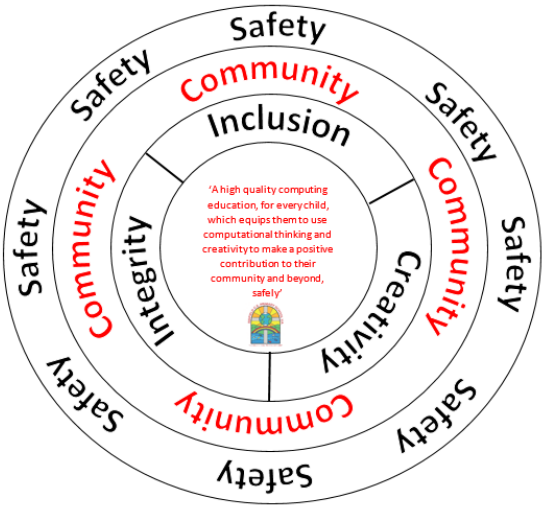
Computing

Vision: 'A high quality computing education, for every child, which equips them to use computational thinking and creativity to make a positive contribution to their community and beyond, safely'

Intent:

Our aim at Binfield C.E. Primary School (V.A.) is for all pupils to develop the essential characteristics to become competent and safe users of technology. We believe that the 'Essential Characteristics' of a Computer literate child include:

- Being able to understand and apply the fundamental principles and concepts of computer science, including abstractions, logic, algorithms and data representations.
- An ability to analyse problems in computational terms and have repeated practical experience of writing computer programs in order to solve such problems.
- Evaluating and applying information technology, including new and unfamiliar technologies, analytically to solve problems.



- Being responsible competent, confident and creative users of information and communication technology.
- Significant levels of originality and the willingness to take creative risks to produce innovative ideas.
- An excellent attitude to learning and independent working.
- The ability to use time efficiently and work constructively and productively with others, when required.
- A passion for the subject and knowledge of, up-to-date technological innovations.
- To be safe, responsible users of technology, including when online.

Implementation: How is Computing organised and taught?

The Computing curriculum is based upon the Early Years Foundation Stage Statutory Framework (2021) and the National Curriculum in England Framework (2014). In Year R, Computing is integrated in with the Early Learning Goals. In Years 1-6, the Computing curriculum is based on the Teach Computing scheme of work, which has been created by the National Centre for Computing Education (NCCE). The scheme has been thoroughly tested by teachers, is grounded in the latest research and allows children to enjoy the full breadth of what Computing involves.

The curriculum is coherently planned and sequences, mapping directly to the National Curriculum strands of: computer science, information technology and digital literacy. Teachers follow the NCCE Teach Computing Units, which are structured around clearly defined learning outcomes and small, connected steps, enabling pupils to develop secure substantive and disciplinary knowledge in all of the aforementioned strands of Computing. Concepts are revisited and built upon through a spiral curriculum model, supporting long-term learning and reducing cognitive overload.

Lessons are delivered using high-quality, research-informed resources that support teachers' subject knowledge and pedagogical content knowledge, ensuring consistency and fidelity of implementation across the school. Vocabulary is explicitly taught and revisited, allowing pupils to articulate their understanding using accurate technical language.

Computing is taught weekly or in blocks, with additional opportunities to apply computing skills across the wider curriculum where meaningful links and application enhance learning. Online safety and digital citizenship are reinforced through clear links with PSHE, ensuring pupils understand how to keep themselves safe online, behave responsibly and manage risks in an increasingly digital world.

SMSC

Through the delivery of the NCCE Teach Computing curriculum, our Computing provision actively promotes spiritual, moral, social and cultural (SMSC) development. The curriculum supports spiritual development by encouraging curiosity, creativity and reflection through problem-solving and digital creation. Moral development is supported through explicit teaching of responsible, safe and ethical use of technology, including when working online. Social development is supported though collaborative programming and digital projects that build teamwork and communication skills. Cultural development is encouraged by exploring the impact of computing on diverse communities and society. In this way, Computing enables children to become thoughtful, responsible and informed digital citizens.

'Power Tools for Learning'

'Power Tools for Learning' are central to the delivery of the Computing curriculum and underpin our approach as a recognised 'Advanced Thinking School' (Exeter University). In Computing, these power tools support pupils from year R upwards to become confident, independent problem-solvers and logical thinkers, in line with the Teach Computing Curriculum.

A range of skills, attributes and tools are explicitly taught and embedded within Computing lessons. De Bono's Thinking Hats are used to help pupils approach computational problems from different perspectives, such as evaluating solutions, managing online risks and reflecting on the impact of technology. Hyerle's Thinking Maps support pupils in organising and structuring their thinking when sequencing algorithms, comparing programs, debugging codes and explaining computing concepts. Claxton's Learning Muscles are developed through the iterative nature of Computing, as pupils practise resilience when debugging; resourcefulness when exploring new software and reflectiveness when evaluating and improving digital outcomes. Bloom's taxonomy is integral to Computing teaching and assessment, ensuring understanding towards higher-order thinking skills, including applying, analysing, evaluating and creating.

Together, these 'Power Tools for Learning' ensure appropriate cognitive challenge across the Computing curriculum and equip pupils with the skills to learn independently, preparing them well for the next stage of their education by the time they leave us in year 6.

Impact: What difference does it make and how do we know?

In determining the impact of the Computing curriculum, we are essentially asking the question, 'How well have pupils developed the essential characteristics of a competent user of technology (as defined above in our Intent)?' We use 2 main methods to determine this: 1. Assessment (quantitative) and 2. Feedback from the pupils, their parents and other stakeholders (qualitative).

Assessment

At Binfield C.E. Primary School (VA), we assess YR pupils using the EYFS 'Development Matters Framework'. For Years 1-6, we use our own 'bespoke assessment' based on a 'best fit' model of what a typical child should achieve in each subject area. Assessment in an ongoing process and is used whilst teaching to support pupil learning - revising and revisiting knowledge as necessary, ensuring that pupils 'keep up' rather than 'catch up'. A summative assessment is made for each child against the typical/expected standard and a determination made as to whether they have met the standard or not is recorded on the school's tracking system.

In YR, pupils are assessed using on-going observation and questioning from staff. Evidence is used to build up a picture of the child's achievements and level of independence over time and summative assessments are made each term. At the end of YR, a determination is made as to whether the child has met the Early Learning Goal.

Feedback

We also value the feedback from the pupils themselves and from other stakeholders. These are captured informally (during lessons, after concerts/performances) but also more formally too e.g. through questionnaires, and comments submitted to the school.