Askwith Primary School

Computing rationale

"A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.

Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils 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." (National Curriculum, 2013

Primary computing allows the children to explore these three core aspects:

- Information technology
- Computer Science
- Digital Literacy

Our computing curriculum is informed by Teach Computing and resources, links and programmes are available for free on the Teach Computing website. We have carefully chosen the units of learning to meet the needs of our children and to ensure that they get a wide range of opportunities to practise their programming skills, media production skills and data collection skills. Digital literacy is threaded through all of these areas of our computing curriculum as it is vital that children know how to be safe, responsible users of computers.

Our digital literacy curriculum is informed by the *Education for a Connected World* document, written by the UK Council for Internet Safety. The aspects of the framework that we have included in the computing curriculum are 'online reputation, 'managing online information', 'privacy and security' and 'copyright and ownership'. The other areas of the framework have been threaded through our PSHE curriculum.

Our curriculum offer for Computing begins in Early Years. 'Children develop quickly in the early years and a child's experiences between birth and age five have a major impact on their future life chances.'

EYFS Statutory Framework, 2021

Although the Early Years Statutory Framework doesn't include technology as part of Understanding the World. We think that it is important to give the children in Early Years the opportunity to explore and begin to develop their computer skills and awareness of online safety.

Why this? Why now?

The whole school long term plan is designed in year groups, but can equally be used in mixed age classes. Computing is taught in blocks throughout the year. The units of knowledge are deliberately chosen to enable pupils to build their vocabulary, knowledge and computational skills. By the end of primary school, the children should be prepared to use technology confidently and safely.

- Computing systems and networks – IT around us (Year 1, Autumn)

During this unit, the children learn about the important components of a computer such as the on/off buttons, the keyboard, the mouse and the arrow keys. They begin to explore using the mouse to click and drag and to open a program. They use the keyboard to type their names, save and edit work.

- Computing systems and networks – IT around us (Year 2, Autumn)

In Year 2, the children build on their knowledge and skills acquired in Year 1. The children deepen their understanding of the uses of computers and how different computers can work together. They enhance their mouse and keyboard skills by creating pictures and navigating webpages using the arrow keys.

- Programming A – repetition in shapes (Year 3 Spring)

Children need to have basic computer skills to be able to access this unit Their learning in Years 1 and 2 leads directly into this unit. Using the program Scratch Jr, the children need to access their own online accounts to begin programming. They use algorithms to create their own program and the modify a count-controlled loop to produce an outcome.

- Programming B – repetition in games (Year 5, Summer)

In Years 5 and 6, the children are using the knowledge and skills that they have been building since Year 1. They develop their use of count-controlled loops in a variety of programs. They then expand their skill set by learning how to use infinite loops and loops that run simultaneously.

Knowledge in Computing

Substantive knowledge in computing is understanding how to use technology, how to be safe and knowing how to program. This is developed through deliberate practice and by children applying their knowledge of how to be computational thinkers so that they know more, remember more and do more. Daily lesson planning must take into account children's working memory capacity so that only one to four pieces of information need to be remembered.

"Computational thinking is an important life skill, which all pupils now need to develop. It is central to both living in and understanding our digitally enriched world. It is a cognitive process involving logical reasoning by which problems are solved across the whole curriculum and through life in general." (Computing at School, 2015)

Disciplinary knowledge in computing is the use and interpretation of substantive knowledge in order to develop original digital content and programs.

Dame Alison Peacock tells us in her book Assessment for Learning without Limits, we can get it very wrong when "false, limiting assumptions are made about children's capacity to learn."

There is no national definition of 'most able'. Abilities are not fixed and the situation is always fluid. In every primary classroom, there will always be a wide range of abilities that change over time. We believe, therefore, that when 'stretching and challenging' our pupils, it is vital to do so within an ethos of high expectation and knowing our pupils well. This enables our planning to be focused and therefore effective in meeting the needs of all pupils.

Reading opportunities in Computing

Reading underpins our entire curriculum. Key texts and pieces of information are carefully selected ensuring that the content and reading age are appropriate. Key texts are on display and made available for the children to access during daily 'reading for pleasure' time.

SMSC in Computing

Spiritual, moral, social and cultural attributes are developed in our pupils throughout the computing curriculum.

The children can develop **spiritually** by reflecting on how computers and the internet have an impact on their lives and others' lives. As part of online safety, children explore the power and limitations of the internet. During these units, the children can reflect on the reliability of sources of information. Throughout the computing curriculum there are many opportunities for the children to develop their self-esteem during presentations and work-sharing.

Moral education in the computing curriculum is centred in respect for others whilst using online devices including laptops, tablets and mobile phones. There are opportunities for children to explore concepts such as copyright and plagiarism that will further develop and heighten their awareness of moral issues that occur on the internet.

Social education in the computing curriculum through highlighting to the children how to stay safe when using social media and through discussions about how the internet has had an impact on how people communicate. Our children also gain a clear understanding of how to be kind to others on the internet and how to stay safe.

As the children move into KS2, they can begin to explore how computers and technology can help us to develop our **cultural** awareness. The children can explore and present new information using the internet and computing programs.

Enhancements in Computing

At Askwith Primary School, we have a carefully planned rolling programme of enhancements to ensure that all year groups are exposed to a wide range of opportunities that enhance children's knowledge and cultural capital in all subjects.

Computing Improvement Priorities

Computing will be monitored throughout 2024-2025 to identify any emerging priorities.

Reviewed September 2024