

## Intent

To create an inclusive, inspiring and technologically challenging curriculum, which develops transferable skills in programming, word processing and data analysis, enabling children to be successful and safe in the technological world.

## Aims

The national curriculum for computing aims to ensure that all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident and creative users of information and communication technology

## The National Curriculum

At Key stage 1 Pupils are taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school

- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.

At Key stage 2 Pupils are taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

- use sequence, selection, and repetition in programs; work with variables and various forms of input and output

- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs

- understand computer networks including the internet; how they can provide multiple services, such as the world wide web; and the opportunities they offer for communication and collaboration

- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content

- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information

- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

## **Implementation**

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with Mathematics, Science, and Design and Technology which provides insights into both

natural and artificial systems.

In our school Computing is taught through the 3 core areas: computer science, information technology and digital literacy, ensuring a broad and balanced curriculum.

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. Programming is taught in a progressive way, moving from programmable toys in EYFS to Scratch Jr, Hopscotch and Daisy in KS1 and Scratch, Python and app development in KS2. This learning is done within our topics and once the skills have been developed children are given enquiry based

challenges with a clear brief and intended user, which require them to apply the skills, giving purpose to their learning.

Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. A knowledge led approach ensures that children have the opportunities to develop topic specific vocabulary and encourages the children to become articulate learners.

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. One example of this is word processing skills, which are taught explicitly in KS1, whereas in KS2 they are used within lessons from other subject areas (e.g. Literacy) to embed these skills in the curriculum and show the children how they can be used in real situations.

Computing clubs at our school offer children further opportunities to develop their computing skills and build on their own interests. IPAD club have enjoyed basic coding and creating stop-motion animation films. Code club have enjoyed working with a STEM ambassador and have deepened their understanding of algorithms. They have even sent some of their coded messages to the ISS (International Space Station).

Children are equipped to use technology safely and responsibly through E-safety teaching. This is covered at the start of each session and we also celebrate an E-safety day where this becomes a whole school focus and children develop and deepen their understanding through memorable experiences. Our school has been awarded the 'E-safety Mark' and our children are extremely articulate in their understanding of how to stay safe when using technology.

## **Impact**

Our knowledge-based curriculum, which is broad and balanced, enables children to develop skills in computing which will prepare them for their futures. It provides a solid base for them to further develop their knowledge of coding and digital design and provides them with word processing and data analysis skills which will be useful in later life.