



Computing

Purpose of study

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, and provides insights into both natural and artificial systems. 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.

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

Intent

When planning and teaching computing at Eastington Primary School, we believe that it is an essential part of the curriculum. Computing, in general, is a significant part of everyone's daily life and children should be at the forefront of new technology, with a thirst for learning. Computing within schools can therefore provide a wealth of learning opportunities and transferrable skills explicitly within the computing lesson and across other curriculum subjects.

Through our thoughtfully crafted computing curriculum, children will be able to develop a wide range of fundamental skills, knowledge and understanding that will equip them for the rest of their life. Computers and technology are a vital part of everyday life; our children will be at an advantage having been exposed to a progressive computing curriculum.

Children must be taught in the form of 'Computational Thinking' in order to provide them with essential knowledge, skills and understanding that will enable them to participate effectively and safely in the digital world beyond our gates.

Implementation

In ensuring high standards of teaching and learning in computing, we implement a curriculum that is progressive throughout the whole school, class by class. Computing at Eastington is taught as discrete weekly lessons. Our curriculum is set up so new skills, knowledge and understanding will build on prior learning from previous classes.

Each new year, children will begin with a unit on online safety. This ensures children understand how to stay safe online and when using technology before approaching other aspects of the computing curriculum. They will be taught to 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.

In Key Stage 1, the children will learn about different digital devices and how they can communicate with them. They will be taught to create and debug simple programs and use logical reasoning to predict the behaviour of simple programs. Discovery Coding is used as the main tool for teaching this part of the curriculum. Coding is taught on a two year rolling programme in key stage one.

In Key Stage 2, the children will design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts. They will use sequence, selection, and repetition in programs, use logical reasoning to explain how some simple algorithms work and correct errors in algorithms and programs. Again, Discovery Coding is used as the main tool for teaching this part of the curriculum. Coding is taught in year groups in key stage two.

Children will be taught to understand computer networks, including the internet, and the opportunities they offer for communication, cooperation and collaboration. They will use search technologies effectively, learn to appreciate how results are selected and ranked, and be discerning in evaluating digital content. Children will be taught to select, use and combine a variety of software (including internet services) on a range of digital devices to create a range of programs, systems and content that accomplish given goals. They will use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Even our children in Early Years provision will be exposed to the understanding of internet safety as they explore the world around them and how technology is an everyday part of their learning and understanding of the world.

At Eastington, class teachers are usually responsible for teaching computing. The needs of all children are met through planning and delivery of subject-specific skills, knowledge and understanding. This is carried out in a variety of ways such as: differentiation through outcome or task, adult support, adapted tasks or materials and pre-teaching of skills and vocabulary where necessary. On some occasions, skills, knowledge and understanding may be adapted to make learning accessible for all, whilst at the same time ensuring challenge.

Impact

After the implementation of this progressive computing curriculum, children at Eastington Primary School should be digitally literate and able to join the rest of the world on its digital platform. They will be equipped, not only with the skills and knowledge to use technology effectively and for their own benefit, but more importantly – responsibly and safely. One of the biggest impacts we want on our children is that they understand the consequences of using the internet and that they are also aware of how to keep themselves safe online.

As children become more confident and ambitious in their abilities in computing, they will become more independent and resilient and key life skills such as problem-solving together using cooperation, logical thinking and self-evaluation become second nature.

We aim to celebrate children's achievements in this subject in a variety of ways. This could include displays, celebration assemblies, sharing on school website, peer evaluation and whole class discussions. This not only supports pupils' self-esteem and motivation but raises the profile of the subject throughout the school community.

Our developing computing curriculum is being monitored and reviewed by the computing subject leader to ensure the intent and implementation of the curriculum is reflected in the day to day teachings at Eastington. A wide range of evidence is gathered through: work scrutiny, teacher and pupil conferencing or surveys, and learning walks. From this, the impact of our curriculum will be analysed and the necessary adaptations and alterations will be made to support the learning of all children.