Computing

Intent

At Coley Primary School we understand that a high-quality computing education is essential for pupils to understand modern information and communication technologies (ICT). We will provide an enjoyable and rigorous curriculum that addresses the opportunities and challenges offered by the technologically rich world in which we live.

We will equip our pupils with the foundational knowledge, skills and understanding of computing they will need for the rest of their lives. They will learn how computers and computer systems work, they will design and build programs, develop their ideas using technology and create a range of content. They will use these skills to become responsible, competent, confident and creative participants of an increasingly digital world and have a solid foundation on which to build in the next phase of their education.

We will ensure that our pupils:

- enjoy and have equal access to technology, regardless of their background or educational need
- develop their ability to think 'computationally' by
  - breaking down problems into smaller steps (decomposition)
  - looking for similarities and differences among and within problems (recognising patterns)
  - focussing on important information only (abstraction)
  - following or developing a step-by-step solution (algorithms)
  - spotting and solving errors (debugging)
- develop competence in coding for a variety of practical and inventive purposes
- understand the connected nature of devices
- are able to connect with others safely and respectfully
- collect, organise, manipulate and present data effectively
- communicate ideas well by using applications and devices throughout the curriculum

We recognise our particular duty to equip our vulnerable pupils, including those in care and those with special educational needs, with the confidence and skills to navigate online environments and to protect themselves online should they be targeted for exploitation by adults. We also seek to address the 'digital divide' between households by ensuring that all pupils have access not only to an excellent curriculum which encourages digital literacy and critical thinking but also to a range of technology at school and in after school clubs to support their learning.

Computing education is an embedded part of our broad and balanced curriculum There are deep links with our science, PSHE (including Relationships Education), design technology and maths curriculum. We encourage pupils to apply computational thinking across the curriculum and to use technology purposefully and creatively in other subject areas.

Implementation

Children in our Early Years Foundation Stage develop knowledge, skills and attributes that form a crucial foundation for computing at KS1. They are given opportunities, through exploratory play and adult-led activities, to make different types of mechanical toys work and to program electronic toys; to name and interact with common technology using age-appropriate software and to select and use technology for a purpose. Through play, they begin to develop the planning, perseverance, creative-thinking and self-evaluation that will be crucial for the Key Stage 1 and 2 programmes of study.

At Coley Primary, we have developed our own scheme of work for Years 1 to 6. Our implementation of the computing curriculum is in line with the 2014 National Curriculum in England. Our curriculum is divided into three core strands which progress and build on each other year on year.

- coding
- e-safety
- digital media

Each term, classes focus on one or two of these strands, with the emphasis from years 2-6 on coding and e-safety. Teachers plan using our Overview for Computing and develop lessons designed to deliver the key knowledge, vocabulary and skills agreed by us all and collated in our knowledge organisers. Computing lessons will be delivered by class teachers and supported, where possible, by visiting external experts for special events.

Coding focusses on the knowledge and skills relating to algorithms, coding and computational thinking. Throughout school, we seek to make this as practical and engaging as possible. We use unplugged activities alongside hands-on tasks to develop children's ability to think computationally, In Key Stage 1 children work with programmable toys and progress in Year 2 to using simple block code. In Key Stage 2, we draw on Code-it resources and the Scratch platform to develop children's ability to predict what code will do, to fix it when it goes wrong and to design engaging apps and games.

Our e-safety teaching seeks to build on children's experience with and use of online technology both in and out of school. We emphasise the enjoyment and possibility of accessing the internet and world wide web and balance this with age-appropriate teaching about solving potential problems with content, conduct and contact. Children are encouraged to think critically about online content, use technology respectfully and search safely and intelligently.

In Years 5 and 6 we have additional mini units on networks, helping pupils to understand how computers connect locally and globally.

Digital media seeks to ensure that all children have sound skills with information technology, such as capturing and editing pictures, video and sound; locating, opening, editing and saving content; using word-processing and presentation software and collecting, organising and presenting data. We use technology where appropriate across the curriculum and provide

children with opportunities to apply and embed the skills they have acquired in computing lessons.

We challenge all pupils to reach their full potential and our emphasis is always on quality first teaching. Lessons and activities are adapted to ensure that they are accessible and meaningful for pupils who have a special educational need, for those who are new to our school and to learning English, as well for those with a particular interest and aptitude for computing.

We are aware of the particular vulnerabilities a number of our children may have in online settings. We seek to ensure that our parents are well-informed via our newsletters and our website and we work in partnership with them to address any issues as they arise. In addition to our e-safety curriculum delivered throughout the year, we have an annual focus on this to coincide with Internet Safety Day.

Impact

We will measure our success by the impact our computing curriculum has on pupils' knowledge and skills as set out in our intent statement above. The computing lead will check regularly that all groups of pupils continue to know more and to remember more. If our pupils are keeping up with our computing curriculum, they will be making good or better progress against the National Programme of Study for Key Stages 1 and 2.

We will check this via:

- discussions and interviews with pupils
- scrutiny of pupils' work where possible, including photos of practical activities
- monitoring of planning
- lesson snapshots, learning walks and staff feedback
- discussions with and moderation between staff