Gotham Primary School Computing

Our Vision for Computing

““Those who can imagine anything, can create the impossible.”

Alan Turing

At Gotham Primary School, we recognise that Technology is constantly changing and affects the lives of everyone. We aim to prepare our children for a rapidly changing world, where work and leisure activities are increasingly transformed by technology. We want our pupils to be able to operate in the 21st century workplace and to know the career opportunities that will be open to them through the continued study of computing. We believe all pupils at Gotham Primary School have the right to a rich, deep learning experience that balances all the aspects of computing so they can become active participants in our ever increasing digital world.

Our aim is to provide a high-quality computing education which equips children to use computational thinking and creativity to understand and change the world. Through the study of Computing, children will be able to develop a wide range of fundamental skills, knowledge and understanding that will equip them for the rest of their lives. These life skills will enable them to embrace and utilise new technology in a socially responsible and safe way in order to flourish. Computing is not a subject that stands alone but is woven and should be an integral part of all learning. Computing at Gotham provides a wealth of learning opportunities and transferrable skills that can be used both within the computing lesson and across other curriculum subjects. By the end of their time at Gotham, not only do we want our pupils to be digitally literate and competent users of technology but we want them to have cultivated and improved their creativity, resilience, problem-solving techniques and critical thinking skills.

Each scheme of learning is taken from the National Curriculum and is based on the key skills essential for a user of technology. Whole class computing occurs weekly to enable a consistent approach that embeds prior learning with a strong sense of challenge. At the core of our computing curriculum 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. We aim to ensure that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology.

National Curriculum of Computing

Purpose of study

Computers and technology are such a part of everyday life that our children would be at a disadvantage would they not be exposed to a thorough and robust computing curriculum. Music embodies one of the highest forms of human creativity. A high-quality computing curriculum should engage, inspire and challenge pupils, equipping them with the knowledge to understand and apply the fundamental principles and concepts of computer science and

evaluate and apply information technology. As pupils progress, they should be able to think critically and develop a more rigorous understanding of the world around them and prepares them to live safely in an increasingly digital British society.

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

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Subject content

Key stage 1

Pupils should be 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.

Key stage 2

Pupils should be 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.