Computing

"Computers themselves, and software yet to be developed, will revolutionise the way we learn"
Steve Jobs

Computing Vision and Values

At the Nightingale Federation we believe that computing is an integral part of modern-day life and therefore provides a wealth of learning opportunities, explicitly within computing and also across other curriculum subjects. At the forefront of our aims we want the children to be able to use technology safely and have a clear understanding of how to keep themselves safe online. We provide children with curriculum focused activities, creative tools, programs and games to support and inspire ***creativity*** in their learning. Children develop ***curiosity*** within computing exploring different programmes and use their knowledge to access STEM activities that allow them to ***"let their light shine".*** The teachers across the Nightingale Federation use the "Teach Computing" programme of study to support teaching and learning of computing across KS1 and KS2. Children at Thomas Bullock are lucky enough to have access across the school to individual Chromebooks. Which we endeavour to use within the computing curriculum as well as across other curriculum areas.

The aims and objectives of Computing are in line with the National Curriculum and enable children:

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

Intent

Computing lessons are delivered as part of the curriculum offer, through the "Teach Computing" scheme of work. Objectives for lessons are underpinned by the National Curriculum. The lessons are well planned and structured to ensure that new skills are learnt and imparted through effectively teaching a sequence of lessons. These provide children at Thomas Bullock with essential knowledge and skills that will enable them to participate effectively in the digital world through teaching computational thinking, as well as developing pupils' ability to use technology to find, explore, analyse, exchange and present information.

Implementation

In Early Years pupils are taught to:

- recognise that a range of technology is used in places such as homes and schools.
- select and use technology for particular purposes.

In 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

In 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

Impact

At Thomas Bullock our approach to the curriculum results in a fun, engaging, and high-quality computing education. The quality of children's learning is evident through observations of the lessons, pupil voice and work produced and saved on the google drive. This evidence is used to feed into teachers' future planning and assessment. The subject-specific knowledge developed in our computing lessons equip pupils with experiences which will benefit them in secondary school, further education and future workplaces. From research methods, use of presentation and creative tools and critical thinking. Computing at Thomas Bullock gives children the essential skills to enable them to pursue a wide range of interests and vocations in the next stage of their lives.

As an inclusive school, we recognise the need to tailor our approach to support children with Special Educational Needs as well as those who would benefit from further enrichment and challenge. As part of the Thomas Bullock trust, we encourage children to have experience with a variety of different computing resources. We also enable children with specific needs to use the technology available to support their learning needs.

We recognise that in all classes there are children of widely- different abilities and we seek to provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty that allows children to deepen their understanding
- providing resources of different complexity to suit the needs of the child
- allowing time for peer- to- peer discussion frequently
- class teacher making appropriate arrangements to accommodate any specific special educational needs.

Spiritual Development

At the Nightingale Federation, children are given the opportunity to express themselves through developing and presenting ideas. We aim to create wonder about the power of the digital age through the use of different computing software and the use of the internet in all subjects. our children aspire to be inspirational digital leaders in their local community and further afield.

Cultural Capital links with Computing

At the Nightingale Federation we are lucky to have links with the local feeder high schools which provide computing workshops for the children. They also have the opportunity as they move up the school to gain responsibility and help support technology during assemblies. In addition to this, children have the opportunity to apply for a job as a digital leader in the school supporting children and staff, taking part in E -safety assemblies and running clubs.

Children are taught extensively about the e-safety rules and how to stay safe online, they take part in E-safety days and are encouraged to actively stay safe using all technology in school and at home.

The children also have an offer of computing clubs during school lunches.