

Montgomery Computing Statement

Subject Lead: Joss Chappell



Intent

The principal aim of Computing at Montgomery is to inspire and prepare pupils for their future by providing them with the opportunity to acquire knowledge and develop the skills necessary to take on the challenges they will meet in the ever-changing digital world. Our computing curriculum focuses on a progression of skills that are broken down into the sub sections of Computer Science and Digital Literacy with Internet Safety. Computer Science mainly focuses on the teaching of programming and coding whilst exploring how digital systems work to allow children to be challenged in writing programs and content to demonstrate their understanding of computer language. Digital Literacy and Internet Safety is taught to ensure that children become competent at using different digital software and hardware in safe way and have a good understanding of how to be responsible when using technology both in and outside of school. This also includes teaching children about how A.i is being used, how it works and how to keep safe. These strands are revisited repeatedly through a number of different software applications to ensure these skills are embedded into our children's long-term memory. They will then have the capacity to take this understanding forward, so it can be used to express creativity and enhance learning in other subject areas through the use of information and communication technology.

Implementation

For our children to understand and apply the fundamental principles and concepts of computer science such as algorithms and logic. Our curriculum provides the children with the opportunity for repeated practical experiences in writing computer code to solve a range of different challenges. The key to this is it is not only lessons that are 'plugged in' using software applications to achieve the desired outcomes, but also 'unplugged' lessons, in which children are given time to understand new and unfamiliar technologies and computer language before applying them digitally. In Foundation, our children are taught about algorithms using robotics. In Key Stage 1, our children are taught about algorithms with the key focus being on how to use sequencing, conditions and loops to support giving accurate and precise instructions to achieve certain digital tasks. Within this, children will also be taught how to debug the programs they are using when errors occur and understand the logical behaviour of how programs behave. They will also be taught age-appropriate content that supports them with using technology safety, keeping specific information private online and what to do when they have concerns when using online technologies. In Key Stage 2, the children will continue to learn about designing, writing and debugging programs applying the skills they have learnt in KS1, but with more focus on using this knowledge to achieve specific goals using different application software that will allow the children to have more creativity in the programs or games that they design. They will also apply these skills across the school in either the building of or programming of robots. Something unique to Montgomery. Within this they will be able to explain how certain algorithms they write may achieve something in their program and describe different elements of the algorithm such as its sequence. The children in KS2 will also continue to access learning that will teach them use technology safely and responsibly, whilst also understanding what is acceptable on an online platform and what to do if they should come across something unacceptable. KS2 children in Year 4 upwards, will also be taught about understanding the computer. This will inform them how a computer operates, the parts that make it and how

networks interlink many different computers. The children will also have access to additional units involving the handling of data and creative media. They learn how to handle data and how to use certain applications to solve problems using mathematical thinking. There is also an A.i scheme of learning that educates children on what A.i is, how it works and how it to be safe with A.i.

Impact

Computing will support our children in their development of understanding the uses of digital technology and mastering how to use it to achieve a range of different outcomes. Teaching Computing will equip pupils with knowledge about algorithms, sequencing, conditions, looping, functions, debugging, software and hardware. It will make pupils aware of how to use technology safely (including the use of A.i) and what behaviour we should display when using software online and how to be a good digital citizen. It will inspire children to be creative and have a better understanding of the technologies that surround them and will shape their futures. Children's learning will be evident through pupil voice, class Seesaw, Kodable, Robotics, programs written on Scratch and Scratch Jr.

Links to Whole School Curriculum Vision

As children progress through Montgomery, Computing will strive to create a variety of first-hand experiences in class and out. There will be the opportunity to take part in activities that demonstrate how the skills they are learning about in computing may be used in their future, some of these may link to how technology will impact on sustainability. We are also looking to work closely with local computing and engineering companies to provide more opportunities and resources for our children.