Discovery Multi-Academy Trust

Computing Curriculum Statement

Quotes that guide us:

'Alan Turing gave us a mathematical model of digital computing that has completely withstood the test of time. He gave us a very, very clear description that was truly prophetic.' George Dyson

'We need technology in every classroom and in every student and teacher's hand, because it is the pen and paper of our time, and it is the lens through which we experience much of our world." David Warlick

Why is it important to teach Computing? (Intent)

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with the STEM subjects Mathematics, Science, and Design and Technology, which as a Trust promotion of STEM skills, is incredibly important. 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 which in this growing digital world will equip the children for their future workplace. They will have the skills to make connections in what they have learnt, and will be supported to be resilient, self-evaluate, and develop a desire to learn as they go to their next stage of learning.

Key Concepts:

- That computers can make things more efficient and easier.
- The internet is a powerful tool when used safely and the importance of being a critical thinker when using the internet and 'not believing everything you read' – to be taught through National Online Safety.
- The importance of coding in the modern age.
- We aim for children to become responsible, competent, confident and creative users of information and communication technology.
- Children can develop, embed and extend their Computing knowledge through unplugged strategies which are then applied to programmes and applications allowing them to reflect and build on prior learning knowledge.

Curriculum Design (Implementation)

Our Computing curriculum provides children with the opportunity to engage with computing as a subject through both explicit and discreet computing lessons linked with themes across the curriculum. Children are also encouraged to utilise computing resources across other areas of the curriculum to ensure they become fluent users of a range of resources.

The curriculum is broken down through the use of a progression map, encompassing the skills and knowledge needed to fulfil the needs of the National Curriculum statements using a small steps

pedagogy, developed through Teaching and Learning Pedagogy (based on Rosenshine's Principles). Every lesson is individually planned so that it can be effectively taught and so it meets the needs of all our pupils, ensuring that prior knowledge is built on utilising both unplugged and plugged methods of teaching. Staff use units detailed on the Computing and E-Safety progression map linked directly with the National Curriculum to make links with their curriculum topics to develop knowledge and skills associated with Computing.

Each lesson has a learning outcome which builds towards their final project. Having discreet lessons supports children to develop depth in their knowledge and skills over the duration of primary learning curriculum. Where appropriate, meaningful links will be made between the computing curriculum at the wider curriculum through the termly thematic planning. During computing lessons, the children will use either the iPads or the Chromebooks/laptops in order to access a range of apps and software. Discreet computing lessons will focus on the curriculum skills of information technology and digital literacy. In addition, children have opportunities to engage with Computing Rich Experiences such as Safer Internet Day and Hour of Code to develop their knowledge of Computing and E-safety outside of their planned curriculums.

Our Computing curriculum gives children the opportunity to:

- To develop knowledge and skills linked with the three aspects of the Computing Curriculum (Computer Science, Information and Technology and Digital Literacy including e-safety) in line with a progression map that utilises a range of software to build and extend what they have learned.
- Engage with rich experiences outside of the curriculum to enthuse children and develop resilience and the ability to be reflective, creative thinkers.
- To explore and tinker with a range of software to encourage them to take risks with their learning and develop problem solving skills.
- To develop and build on their knowledge of how to use computerised equipment and the internet safely, supported by the National Online Safety Platform which bring the whole school community together (pupils, staff and parents) to support learners.

Knowledge Focused

Computing work is recorded in Computing books. Curriculum newsletters are sent home at the beginning of the term so parents can support learning at home. Thematic planning means that the children are making links across the curriculum, and therefore the learning is more likely to become embedded as it is revisited across the term. This also gives them the opportunity to apply what they have learnt. The school uses the National Online Safety platform to teach online safety, which is taught explicitly every term. Staff training is also provided throughout the year.

What we do well as a Trust (Impact)

Through a thematic approach, our Computing curriculum aims to give pupils the life-skills to enable them to embrace and utilise new technology in a socially responsible and safe. We are passionate about our children becoming autonomous users of computing technologies, gaining confidence and enjoyment from their activities. We want the use of technology to support learning across the entire curriculum. As well as being digitally literate and skilled users of technology, we are encouraging them to use their STEM skills to be flexible, creative, collaborative, problem solvers and to use their inquiry skills to develop knowledge or solve problems. Microsoft Teams and E-schools had a huge positive impact during lockdown. The school provided technology (where needed) to enable all

children to access remote learning. Teachers continue to build on prior knowledge utilising 'unplugged' teaching methods to extend children's knowledge which can then be applied confidently and fluently to technology. Regular monitoring with children shows that children are able to articulate what they have learnt not just from curriculum activities but that they can also related this to the theme that they have been learning about each term. The children have demonstrated their enthusiasm about using technology and how they have been able to use the technology outside of their computing lessons.