

Computing Page Profile

Computing at MCPA

Intent

At MCPA we aim to give our pupils the life-skills that will enable them to embrace and utilise technology in a socially responsible and safe way in order to flourish. Our pupils will be able to operate in the 21st century workplace and know the career opportunities that will be open to them if they study computing. The use of technology will support learning across the entire curriculum and we will ensure that our curriculum is accessible to every child. Not only will our pupils be digitally literate and competent end-users of technology but, through our computing lessons, they will develop creativity, resilience, problem-solving and critical thinking skills. Our pupils will have a breadth of experience to develop themselves as individuals but also become responsible digital citizens.

Implementation

Children will have weekly computing lessons and recap on prior learning based upon the Teach Computing a DFE funded scheme of work in partnership with The National Centre for Computing Education. These lessons are based on the National Curriculum to ensure a clear progression. This ensures that skills and knowledge are built on year by year and sequenced appropriately to maximise learning for all children. To ensure a broad range of skills and understanding, computing is taught across three main strands: digital literacy, computer science and information technology. Physical work is recorded in the back of science books and any evidence on devices is saved onto a powerpoint that children will then keep for the remainder of the academic year.

As part of information technology, children learn to use and express themselves and develop their ideas through ICT for example writing and presenting as well as exploring art and design using multimedia.

Within digital literacy, children develop practical skills in the safe use of ICT and the ability to apply these skills to solving relevant, worthwhile problems for example understanding safe use of internet, networks and email. Online safety is also taught through our PSHE curriculum and communicated with all staff and parents, through our school website and Parent Breakfast meetings. National Online Safety is a website we use to support teaching and also deliver training to both teachers and parents.

Esafety is becoming more and more important in an ever changing world for our children. It is important that children feel safe and know how to navigate the internet. As this is the case, the school and curriculum have had a larger focus on this as we have moved to a new curriculum, covering it across the year using natterhub, a interactive lesson which children navigate through scenarios and record them as they go through the lesson.

In computer science we teach children to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. Also to analyze problems to computational terms, and have repeated practical experience of writing computer programs in order to solve such problems.

At MCPA, we provide cross curricular opportunities for children to apply their computing knowledge and skills. We use Rosenshine's Principles of Instruction to help us in our delivery of lessons. Lesson structure consists of a recap over previous learning, teacher modeling and practice time for the children. Lessons are very hands-on with the children being actively engaged and the adults checking for understanding and providing additional support where needed.

Impact

All children will leave MCPA as competent and safe users of ICT with an understanding of how technology works. They will have developed skills to express themselves and be creative in using digital media and be equipped to apply their skills in computing to different challenges going forward.

Research

EEF:

- Technology offers ways to improve the impact of pupil practice
- Technology can be used to improve the quality of explanations and modeling
- Technology can play a role in improving assessment and feedback

Sue Sentance and Andrew Csizmadia

In a 2015 paper, Sue Sentance and Andrew Csizmad concluded that concentrating on a few specific strategies could help teachers to feel more confident in the classroom. They classified the strategies as:

- Contextualised learning.
- Computational thinking skills development.
- Working collaboratively.
- Learning away from the computer.

Rosenshine's Principles of Instruction (2012) recommends:

- Start each lesson with a recap of what has been covered already.
- Introduce new material in baby steps, with students practicing each one in turn.
- Ask students questions and check all of their answers.
- Provide models.
- Provide scaffolds.