



The Value of Computational Thinking

Computers are incredible devices: they extend what we can do with our brains. With them, we can do things faster, keep track of vast amounts of information and share our ideas more easily with other people. To enable us at St Mary's Catholic Academy to develop the use of computers we have been working on becoming computational thinkers.

Computational thinking is about looking at a problem in a way that a computer can help us to solve it. The key concepts of being a computational thinker are logical reasoning, algorithms, decomposition, abstraction, spotting patterns and generalisations and evaluating.

We believe these concepts are transferable across all curriculum areas including maths and science.

'I think it's fair to say that personal computers have become the most empowering tool we've ever created. They're tools of communication, they're tools of creativity, and they can be shaped by their user.'

Bill Gates



St Mary's Primary Academy

Computing at St Mary's...

We aim to:

- Promote children's safety online, teaching the SMART rules to keep themselves safe both in and out of school.
- Support the children to understand and apply the fundamental principles and concepts of computer science.
- Encourage our children to become computational thinkers, solving problems in computational terms and have practical experiences solving problems by writing and debugging code.
- Promote children's ability to reason through opportunities to discuss their thinking and understanding in relation to computing. We encourage children to ask questions to extend knowledge and make predictions.
- Enable our children to evaluate and apply information technology, including new or unfamiliar technologies.
- Promote our children to be responsible, competent, confident and creative users of information and communication technology and they are encouraged to talk about their learning and how it impacts the world.
- Our curriculum outlines the progression of knowledge and skills that we expect children to develop. It is aligned so that knowledge, skills and vocabulary develop and logically build within each year.



Year 3 children using the PC to learn to code through Scratch.

Digital Leaders

For 2021-2022, children from Year 5 and Year 6 will be designated 'Digital Leaders'.

They will act as role models to their peers, support teachers in computing lessons across the school, promote e-Safety and help maintain ICT equipment. Digital Leaders will be given training by Mr Poole and have the passion to drive computing forward in school. They will meet regularly to discuss actions they can take to make computing in school a better experience for all!

"I love to create code to program a sprite in Scratch and use the Internet to research the topic I am looking at to find out new things!"
Leo, Y5

Our computing teaching will usually follow a cycle of:
E-safety – Digital Literacy – Algorithms

E-safety

- ❖ Teaching the children to use technology safely and respectfully.

Digital Literacy

- ❖ To use technology purposefully to create, organise, store, manipulate and retrieve digital content.
- ❖ Understand computer networks including the internet and the opportunities they offer.

Algorithms

- ❖ Understand what algorithms are and teach how to design, write and debug programs.
- ❖ Promote the use logical reasoning to explain programs and how they work. To enable them to detect and correct errors in algorithms and programs.



Children enjoying VR day at St Mary's.

For information on how we monitor computing, any e-Safety concerns or questions about the curriculum in general - please speak to Mr Poole.