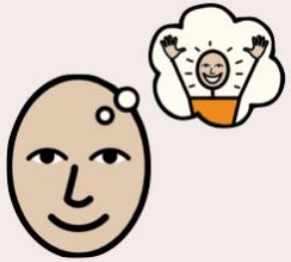
Computing

Curriculum Drivers

Aspiration

Community



Creativity

Language and communication

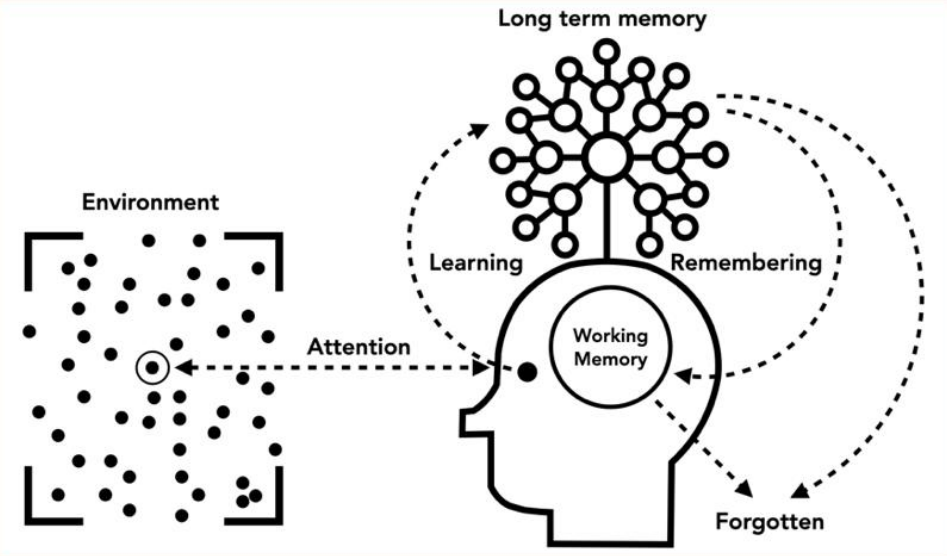
TRUST THANKFULNESS PERSEVERANCE RESPECT COMPASSION COURAGE

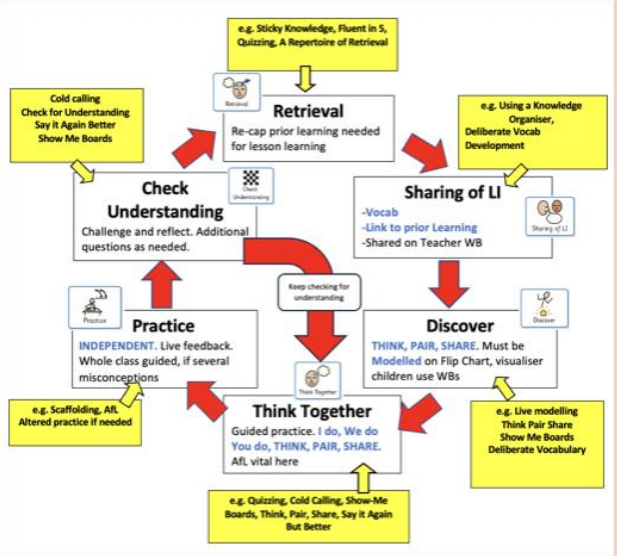
Curriculum Drivers

At Marden Vale we believe that our curriculum should offer not only the national curriculum but life skills and experiences beyond this. When designing our curriculum, we took into account the needs of our learners and community, our vision and values, and the location of our school. These curriculum drivers are used to underpin the development work we undertake in all areas of school life and to ensure our curriculum offer is enriched and personalised to our children and their families.

Our four key drivers are Aspiration, Community, Creativity and Language and Communication.

Learning model and lesson design





Tom Sherrington's learning model underpins our teaching and learning by ensuring that lessons are well-sequenced and structured with clear learning intentions. We prioritise active student engagement, regular retrieval practice and high-quality feedback, allowing students to consolidate and retain knowledge effectively. The model supports teachers in assessing progress through formative assessment and adapting teaching to meet individual needs. A focus on delivering lessons with optimal cognitive load and promoting independent learning, helps students develop a deep understanding of the curriculum and the skills necessary for lifelong learning.

Our Curriculum Drivers

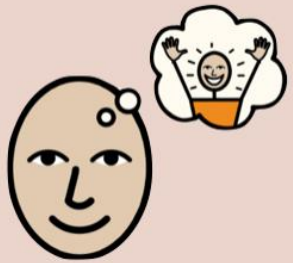
Aspiration

Our computing curriculum underpins a successful future for our children, giving them no limits to what their ambitions are and enabling them to live out their goals. We provide a range of access to technology through our curriculum and encourage the use of technology in all subjects. Our curriculum ensures that children leave Marden Vale CofE Academy as digitally literate, active and responsible participants in a modern, digital world.

Community

Our computing curriculum enables our learners to develop a sense of pride in themselves and their learning, ensuring that they are able to take this into their own community. Through the use of collaborative learning in computing, we encourage children to develop respect for others. Through our teaching of online safety, we enable our children to become part of the global online community in a sensible, positive, responsible and safe manner.

Creativity



Our computing curriculum inspires all pupils to be creative through the use of the creating media aspects of our learning. We encourage pupils to collaborate and design their own programs, systems and content, with no limits on creativity. We empower our children to explore new concepts and continually build on their knowledge and experience of technology.

Language and communication

Our computing curriculum provides opportunities for children to explore how the internet can provide a range of opportunities to communicate and allow children to become expressive communicators in our modern world. Children are educated on how to express themselves online safely and effectively through our comprehensive curriculum and focus on online safety. Children are also encouraged to work collaboratively with others through all of our units to enhance language and communication skills in all of our pupils.

Intent

At Marden Vale C of E Academy, we believe that every child should have the right to a curriculum that champions excellence, supporting pupils in achieving to the very best of their abilities. We understand the immense value technology plays not only in supporting the Computing and whole school curriculum but overall in the day-to-day life of our school. We believe that technology can provide: enhanced collaborative learning opportunities; better engagement of pupils; easier access to rich content; support conceptual understanding of new concepts and can support the needs of all our pupils. In line with the National Curriculum 2014, the curriculum at Marden Vale C of E Academy aims to:

- Provide an exciting, rich, relevant and challenging computing curriculum for all pupils.
- Enthuse and equip children with the capability to use technology throughout their lives.
- Give children access to a variety of computing software and equipment.
- Instil critical thinking, reflective learning and a 'can do' attitude for all our pupils, particularly when engaging with technology and its associated resources.
- Teach pupils to become responsible, respectful and competent users of data, information and communication technology.
- Equip pupils with skills, strategies and knowledge that will enable them to reap the benefits of the online world, whilst being able to minimise risk to themselves or others.
- Use technology imaginatively and creatively to inspire and engage all pupils, as well as using it to be more efficient in the tasks associated with running an effective school.
- Provide technology solutions for forging better home and school links

Implementation

At Marden Vale, iPads are available for children to use across the school as well as a bank of Chromebooks which are accessed by our Year 5/6 children.The use of this technology throughout the school results in children learning skills that they can apply both in and outside of school. We have aspired to a computing curriculum that creates opportunities for skills to be applied across a wider range of subjects, giving pupils ample opportunities to practise and refine their skills. At Marden Vale, our computing curriculum has been created using a combination of resources from the 'Teach Computing' programme (https://teachcomputing.org/curriculum) and 'Barefoot computing' (https://www.barefootcomputing.org/curriculum) in EYFS as well as Apple's Everyone Can Create and Swift Playground to support the computing curriculum we deliver. This ensures that there is a progression of knowledge and skills that the children can build on each year within the computer science aspects of the curriculum. We also use Jigsaw and Project Evolve (https://projectevolve.co.uk/) to ensure full coverage of the e-safety aspects of the curriculum.

Impact

By the end of KS2, Children at Marden Vale will have highly developed transferable knowledge, skills and understanding across our key concepts of learning. Children at our school show high levels of originality, imagination, creativity and innovation in their understanding and application of skills in computing across a variety of subject areas. For example, when answering big questions in any curriculum area, there is evidence of technology being used to redefine learning tasks. There will be opportunities to share pieces of work such as via Trilby TV for others to celebrate and learn from. We use a variety of strategies to evaluate the knowledge, skills and understanding that our children have gained in each unit including: CPD to ensure that teacher pedagogy and assessment is secure, regular feedback, marking and pupil voice feedback, subject monitoring and regular low stakes knowledge assessments, using a range of creative approaches

Computing at Marden Vale

National Curriculum

KS1

- 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.

KS2

- 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.

Our Big Ideas that link the learning

- Systems and Networks
- Programming
- Staying Safe
- Creating Media
- Data and Information

Second Order Concepts

- Responsibility
- Cause and Consequence
- Purpose
- Similarity and Difference
- Written and Oral Expression

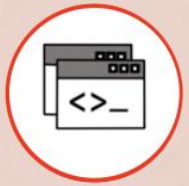
Our Big Ideas

Systems and networks

Systems, networks and how they are used, the internet, hardware and software

Programming

Interpreting, creating and evaluating algorithms, programming to accomplish specific goals, detecting and correcting errors



Staying Safe

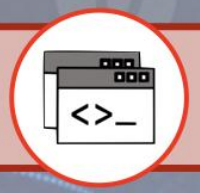
Evaluating online content and using all elements of technology in a safe, respectful and responsible manner

Creating media

Design and development, communicating and collaborating online, presenting and creating

Data and information

Collecting, analysing, evaluating, presenting data and information


Computing Curriculum Overview


	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Term 1	Busy Bodies - Barefoot Computing - Unplugged instruction following and giving	Computing systems and networks Teach Computing: Technology around us	Computer systems and networks Teach Computing: IT around us	Computing systems and networks Teach Computing: Connecting computers	Computing systems and networks Teach Computing: The Internet	Computer systems and networks Teach Computing: Systems and searching	Computer systems and networks Teach Computing: Communication and collaboration
Term 2	Creating Media Photography of everyday objects	Creating Media Digital Painting	Creating Media Digital Photography	Creating Media Stop-frame animations	Creating Media Audio production	Creating Media Video production	Creating Media Webpage creation
Term 3	Programming A Moving a robot (modelled)	Programming A Moving a robot	Programming A Robot algorithms	Programming A Sequencing sounds	Programming A Repetition in shapes	Programming A Selection in physical processing	Programming A Variables in games
Term 4	Date and Information Drawing lines and patterns	Data and Information Grouping data	Data and Information Pictograms	Data and information Teach Computing Branching databases	Data and information Teach Computing Data logging - sensors	Data and information Teach Computing Flat-file databases	Data and information Teach Computing Introduction to Spreadsheets
Term 5	Creating Media Type my name using a keyboard and start to use a mouse	Creating Media Teach Computing Digital writing - Typing skills	Creating media Digital music Teach Computing/ Chrome Music Lab	Creating Media Desktop publishing	Creating Media Photo editing	Creating Media Vector graphics	Creating Media 3D modelling
Term 6	Programming B Initial Swift Playground levels (modelled)	Programming B Teach Computing Programming animations using Scratch Jr	Programming B Teach Computing Programming quizzes using Scratch Jr	Programming B Events and actions in programs	Programming B Repetition in games	Programming B Selection in quizzes	Programming B Sensing movements

Computing at Marden Vale

EYFS

- Term 1: Unplugged instruction following
- Term 2: Photography
- Term 3: Moving a robot (modelled)
- Term 4:Digital drawing
- Term 5: Type my name
- Term 6: Programming a sprite (modelled)

Year 1

- Term 1: Technology around us
- Term 2: Digital painting
- Term 3: Moving a robot
- Term 4: Grouping data
- Term 5: Digital writing
- Term 6: Programming animations

Year 2

- Term 1: Information Technology around us
- Term 2: Digital photography
- Term 3: Robot algorithms
- Term 4: Pictograms
- Term 5: Digital music
- Term 6: Programming quizzes

Year 3

- Term 1: Connecting computers
- Term 2: Stop-frame animations
- Term 3: Sequencing sounds
- Term 4: Branching databases
- Term 5: Desktop publishing
- Term 6: Events and actions in programs

Year 4

- Term 1: The internet
- Term 2: Audio production
- Term 3: Repetition in shapes
- Term 4: Data logging
- Term 5: Photo editing
- Term 6: Repetition in games

Year 5

- Term 1: Systems and searching
- Term 2: Video production
- Term 3: Selection in physical processing
- Term 4: Flat-file databases
- Term 5: Vector graphics
- Term 6: Selection in quizzes

Year 6

- Term 1: Communication and collaboration
- Term 2: Webpage creation
- Term 3: Variables in games
- Term 4: Introduction to spreadsheets
- Term 5: 3D modelling
- Term 6: Sensing movements