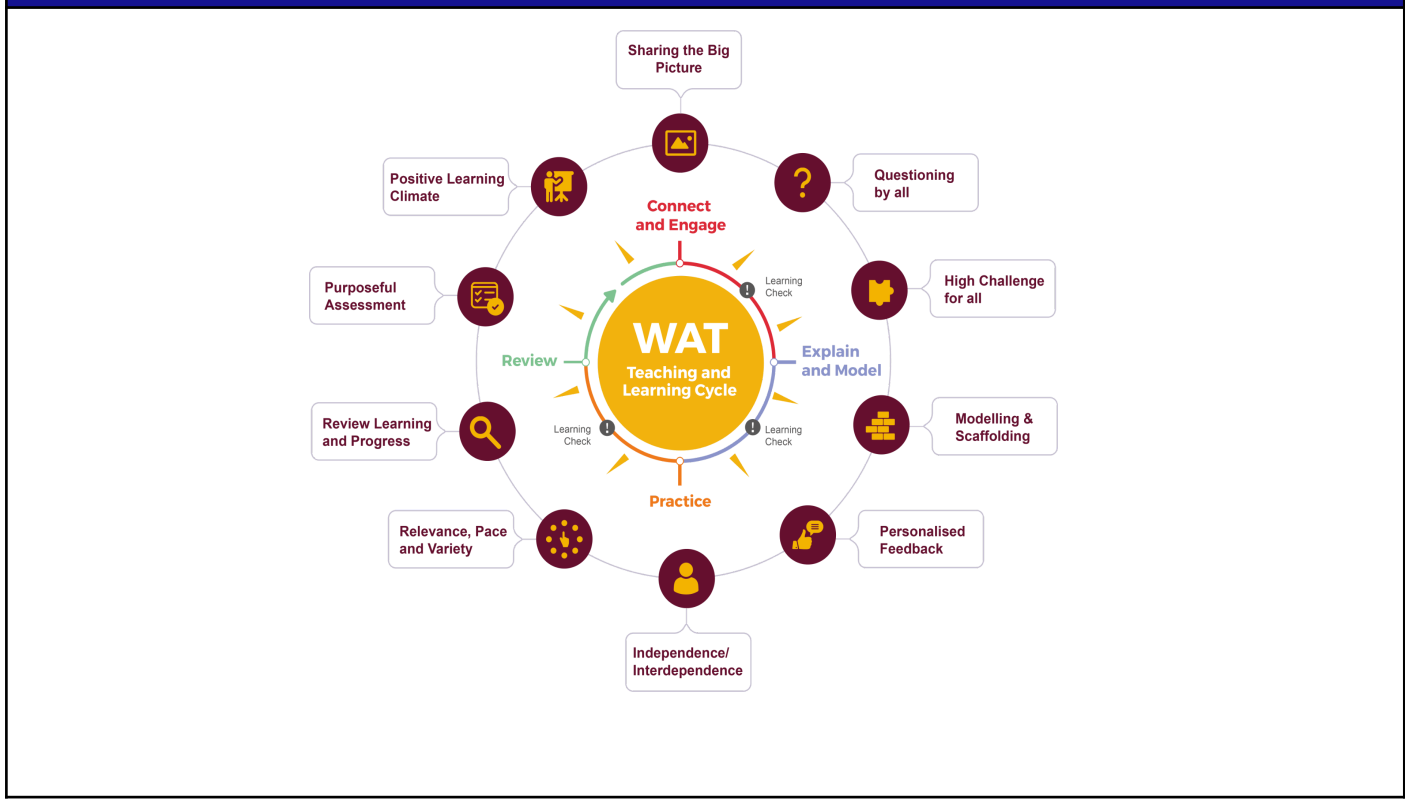# Computing

WAT Aspire Curriculum - our curriculum develops students' aspirations so that they strive to be the best that they can be. In all subjects we carefully plan the subject knowledge, skills and vocabulary, coupled with specific Aspire learner skills and character virtues, so that our students have the tools to be successful in learning and in life. This document sets out the key principles in this subject area.

Teaching and Learning Cycle

Long Term Overview

EYFS

Although computing is not explicitly mentioned within the Early Years Foundation Stage (EYFS) statutory framework (which focuses on the learning and development of children from birth to age five) there are many opportunities for young children to use technology to solve problems and produce creative outcomes. In particular, many areas of the framework provide opportunities for pupils to develop their

ability to use computational thinking effectively, such as through undertaking projects. These opportunities enable practitioners to effectively prepare children for studying the computing curriculum.

KS1 and KS2
- Units should be taught in the order detailed in the [Manor Way Computing Overview Document.](#)
- Pupils in Key Stage One and Key Stage Two will follow the National Curriculum Programmes of Study as set out in the National Curriculum.

The Computing Curriculum Purpose of Study
A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science and design and technology, and provides insights into both natural and artificial systems.

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 and coding. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems, and a range of content e.g. using applications to enhance learning across the curriculum.

Computing also ensures that pupils become digitally literate – able to use, express themselves and develop their ideas through information and communication technology – at a level suitable for the future workplace and as active participants in a digital world including online safety.

The national curriculum for computing aims to ensure that all pupils:
- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- are responsible, competent, confident, and creative users of information and communication technology

In Key stage 1

Coding

- 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

Examples include learning how to program and use Floor Crawling Robots and apps

Creativity

▪ use technology purposefully to create, organise, store, manipulate and retrieve digital content
▪ recognise common uses of information technology beyond school

Examples include learning about the internet and other applications

Online Safety

▪ 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

In Key stage 2

Coding

▪ 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

Examples include learning a coding language and using it to design and program activities

Creativity

▪ 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

Examples include learning about the internet, PowerPoint, sound, photography, word processing, databases, creative media, spreadsheet, Prezi, Moviemaker, and other applications

Online Safety

- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Examples include learning about emails, online gaming, social media, chat rooms, mobile phones, plagiarism, copyright, advertising

Medium Term Plans

Medium Term plans are developed from the knowledge and skills identified on the knowledge organisers which set out the skills, knowledge and vocabulary to be developed for each unit of work.

Year 1 MTP
Year 2 MTP
Year 3 MTP
Year 4 MTP
Year 5 MTP
Year 6 MTP

Knowledge Organisers

Knowledge organisers for each unit of work set out the skills, knowledge and vocabulary to be developed through the unit. Knowledge organisers for each year group can be seen by clicking on the links below.

Year 1 Units
Year 2 Units
Year 3 Units
Year 4 Units
Year 5 Units
Year 6 Units

Vocab

Computing vocabulary is planned progressively from Year 1 through to Year 6 and shared on the Knowledge Organisers.

Computing vocabulary progression Year 1-Year 6

Assessment

- AFL is used in every lesson.
- Activities include multiple choice and short answer quizzes and other learning checks.

- Gaps identified feed into Smart Starts and where appropriate consolidation weeks address gaps. These activities allow us to assess pupils' understanding, knowledge and skills and enables us to give appropriately timed feedback that focuses on moving learning forward.

High Challenge for All

Challenging and interesting work is an entitlement for all our learners irrespective of their ability. High challenge is a focus for us at Manor Way and this is our 'High Challenge for All' rational which sits alongside our Teaching and Learning cycle High Challenge for AllOurModel

SEND

Class teacher input is given via targeted classroom teaching (Quality First Teaching) where individual needs are planned for. All staff have high expectations of all pupils. They use what the children already know and use a range of teaching strategies to involve every child in learning. This may include using practical equipment or specific strategies, e.g. use of a reading ruler, concentration cushions. Through reviewing children's progress, daily gaps in their understanding or learning can quickly be identified and support can be put into place to enable them to make progress. Teachers plan, scaffold and/or differentiate work to closely match a child's ability.

When a pupil has been identified with special needs, their work will be further scaffolded or differentiated by the class teacher to remove barriers to learning and enable them to access the curriculum. The use of specific resources and strategies will also be considered and used where appropriate. This may include the use of visual prompts, sensory audits, task management boards to chunk tasks and support children with memory difficulties. At Manor Way the interests of the child are always considered when planning the curriculum to ensure that children are engaged and enthusiastic about their learning.

Computing Learner Tools

Each child will have a copy of the knowledge organiser for the unit being studied inside their curriculum books. This contains key concepts for the current learning as well as the key vocabulary for that unit.

All pupils in Years 4-6 have access to a 1:1 iPad device in Years 3-6. Pupils in other years have access to a class set of Google Chrome Books to support the computing curriculum.