

	Computing Policy		
	Member of staff responsible	Date Approved	Review Date
	Charlotte Cowan Samantha Dickinson	Spring 2025	Spring 2027

Intent

Our Philosophy for Teaching Computing

Newton Village Academy understands and values the importance of teaching Computing from a young age. We aim to give our children the life skills necessary to embrace and utilise technology in a safe and responsible manner.

Children become independent users of a range of technologies and become digitally literate. We provide opportunities to develop computational thinking and problem-solving skills as well as creativity and resilience. We aim to instil a love of computing in our children to encourage further study of this subject and create digital citizens within their local and global community.

It is our aim for children to master the three core areas of Computing (Computer Science, Information Technology and Digital Literacy) to such an extent that they are able to pursue careers within Computing and make effective use of technology in their everyday lives.

National Curriculum

The National Curriculum for Computing aims to ensure that all children:

- understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
- evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
- become responsible, competent, confident and creative users of information and communication technology.

Our Curriculum

Our Computing Curriculum has been carefully planned to cover all of the National Curriculum aims through a structured, cyclical, sequence of key areas which are revisited every year to encourage a deepening and broadening of children's knowledge and skills. Our curriculum is organised into the following key areas:

- **Computer Science** – the understanding of coding and programming across a range of physical devices and digital resources.
‘Computer Systems & Networks’ & ‘Programming’
- **Information Technology** – the range of skills required to operate and manipulate specific programs, systems, and content.
‘Data & Information’ & ‘Creating Media’
- **Digital Literacy** – the knowledge required to use technology safely and to evaluate and react to any potential risks of the online/digital world. ‘Online Safety’



Implementation

Curriculum Organisation

Our Computing scheme of work has been designed as a spiral curriculum with the following key principles in mind:

- **Cyclical:** Pupils revisit the five key areas throughout KS1 and KS2.
- **Increasing depth:** Each time a key area is revisited, it is covered with greater complexity.
- **Prior knowledge:** Upon returning to each key area, prior knowledge is utilised so pupils can build on previous foundations, rather than starting again.

Our scheme of work has been carefully planned to ensure progression of skills through a cyclical sequence of topics revisited in each year group. This revisiting of previous knowledge, spaced repetition and chunking within the curriculum encourages children to develop their recall of embedded knowledge.

Computing is taught through our scheme of work which has been adapted using the primary scheme of work from the ‘National Centre for Computing Education’. The key areas enable pupils to study in-depth key computational understanding, digital skills and vocabulary. Each key area aims to activate and build upon prior learning, including EYFS, to encourage improved cognition and retention. Each unit is carefully sequenced to enable pupils to purposefully layer learning and facilitate the acquisition and retention of key knowledge. Individual lessons build on knowledge that has previously been taught. Outcomes are revisited regularly as part of a spaced retrieval practice method to ensure pupils retain key knowledge and information.

Timetable

Six units of work are taught in each year group and these are timetabled so that Computing is taught every half term either on a weekly basis or through blocked sessions – this is decided by the teacher and is dependent on the topic content and length.

Teaching & Learning Approach

1. Cumulative Quizzing

Quizzes are used to establish prior knowledge and understand the content of each unit. At the end of each unit, pupils are given an ‘assessment’ quiz to check their understanding and knowledge. As part of spaced retrieval practice, these quiz questions are often revisited on an ad hoc basis to encourage recall.

2. Lesson Activities

Core principles are taught through activities that are relevant, practical, engaging and wherever possible, crosscurricular, providing both support and challenge for learners.

We endeavour to expose students to a variety of software, programs, and equipment in order to offer a range of appropriate challenges and experience.

3. Digital Literacy

A wide range of hardware and software are regularly planned into lessons in other areas of the curriculum. Laptops and interactive class screens are integrated into learning on a daily basis. Frequently used software tools include **Microsoft Word**, **Powerpoint** and **Excel**, as well as the now familiar video conferencing software **'Teams'**.

Learning By Question is another resource we use regularly to support teaching and learning across a wide range of subjects to encourage recall and consolidation.

Teachers have opportunities to plan in ad hoc computing skills to increase cross-curricular coverage using any of the above tools or something else that would aid in the learning objective.

We make use of **'Reading Progress'** to encourage children to read aloud both at school and at home.

Every child from Year 2 to Year 6 has a Times Tables **Rockstars** and a **Numbots** account that they can access at home and school to practice their times tables, place value, addition and subtraction on any device. There are weekly battles among classes to constantly encourage use.

All children have a **'Purple Mash'** account which provides a wide range of excellent programs and resources that support our curriculum. Class activities as well as homework are set for the children on here and their work is saved within the program.

There is usually access to a computer club offered as an extra-curricular activity to encourage engagement with and development of computing skills and this is generally related to the computer science aspect of the curriculum.

All of the above serve to create a cohort of digitally literate children growing up with technology.



4. Educational Visits and Visitors

Year 5&6 children visit our trust secondary school to take part in an annual 'STEM' event.

Classroom Organisation

All children have their own laptops in their classroom. Their work is stored to the 'Cloud' through.

Provision for Lower & Higher Ability

Pupils needing support are quickly identified and interventions are put in place to give a mixture of additional adult support and peer support, as well as increased verbal and live feedback during the session. Children are organised into pairs so that they can help and support each other.

EYFS

The early learning goals that previously linked to Computing (EYFS Technology) have been removed from the Early Years Foundation Stage Framework 2020. There is no mention of the teaching of technology in the education programmes or the development matters document.

We understand the importance of children developing their computing skills and will continue to use a range of technology to support and enhance learning in other areas of the curriculum, as well as preparing children for the KS1 Computing curriculum. Children have daily access to a range of technology resources such as torches with switches, remote controlled cars, Bee-bots, talking tins, voice-recording toys, as well as class I-pads and an interactive whiteboard.

We use a range of technology resources to support learning in other areas of the curriculum such as the White Rose interactive resources, and all children have access to Purple Mash, which includes a virtual EYFS classroom with continuous provision areas

where children can extend their learning through a range of online activities. Children are taught how to use the resources for different purposes, for example, I-pads to watch videos, play games, take photographs and listen to stories. '

Parents

We know how important parental involvement is in maximising our teaching and learning of all areas of the curriculum. Consequently, we keep parents up to date with their children's progress and involve parents as much as possible through:

- Sending information home regarding what the children have done in Computing at school using 'Tapestry' and through posts on our social media sites.
- Setting regular, fun electronic homework 'Timestables Rockstars', 'Numbots' and 'Purple Mash'.
- Individual children's progress and attainment is reported to parents termly through face to face meetings and an end of year report.
- Keeping parents up to date with our curriculum through newsletters and our website
- We offer devices to children who do not have access at home.

Transition to Secondary Schools

Our Computing scheme of work was developed in liaison with the Computing Subject Lead in our trust secondary school with a view to continuing the development of key skills as well as using similar resources.

Continuous Professional Development

Strong subject knowledge is vital for staff to be able to deliver a highly effective and robust Computing curriculum. The Kapow and Purple Mash websites offer excellent CPD to support the teaching of our Computing curriculum and teachers take part regularly in online courses.

Teachers are encouraged to watch the teacher videos on Kapow and Purple Mash to develop their subject knowledge and aid their own acquisition of computing skills and knowledge. They are also supported by webinars from computing specialists through the Kapow and Purple Mash websites. Teachers have commented on how useful these videos have been in helping them navigate programs and supporting the children.

In addition to this on-going CPD, we work very closely with our local secondary trust school and their Computing subject lead. We have a 'Computing Team' on 'Microsoft Teams' where staff collaborate, share ideas and organise CPD events for staff.

Subject leads within our trust meet regularly to share good practice and to ensure that we are using relevant and up-to-date technologies.

Staff receive regular training through staff meeting time from our Computing Subject Leader, and our Computing technicians regularly lead training sessions on new technologies and specific programs at our request.

In order to achieve the outlined intentions, the Computing curriculum is continuously reviewed through monitoring and evaluation by the Subject Leaders and Senior Leadership Team.

Assessment

Formative

Teachers carry out regular repeated 'quizzes' to ensure learning is embedded, as part of their lessons.

Children's work is easily viewed through their own 'documents' and 'shared drive' so that teachers can monitor and check their attainment and progress.

Children's work completed on programs like 'Purple Mash' can easily be viewed and is often marked and analysed through the program to enable teachers to monitor progress.

Children are assessed through:

- Questioning
- Observation
- Use of whiteboards for answering whole class questions
- Self-assessment
- Peer-assessment
- Quizzes
- Verbal feedback

Summative

Quizzes are completed by the children as end of unit assessments and these results are recorded to monitor attainment and progress through the year. These results are also used to assess which topic areas need more reinforcement and repetition.

Impact

Whole School Tracking

Assessment results are input into a tracking spreadsheet which enables teachers, subject leads and SLT to monitor progress and attainment on a half termly and annual basis, as well as tracking between key stages.

Subject Monitoring

Progression of skills is monitored regularly through regularly reviewing and scrutinising children's work as well as organising discussions with children to talk about what they have learnt, understood and remembered about what they have been taught.

Lessons are regularly visited to monitor the quality of teaching and learning.

Staff are encouraged to feedback at staff meetings in order to continuously improve our teaching and learning.

Impact of the curriculum on the children

Children clearly love using their laptops and other devices such as micro-bits and iPads, and they are competent in all areas of technology.

Children's learning across the curriculum is hugely enhanced through a wide range of programs used in different subjects like Purple Mash, Numbots, Timestables Rockstars.

Our children are very enthusiastic and excited to create media and they demonstrate a lot of creativity in what they produce.

Children are very aware of keeping Safe Online – they know what is right and wrong and the rules they should follow. Children have very good keyboard skills and are quick to complete work on their laptops.

Less able children are more confident learners knowing that technology supports their learning.

Children have become more independent learners through using technology to research topics in a variety of subjects.

As a direct result of our new curriculum, children have become very good trouble shooters, for example in Year 6 they know what to do if their laptops are not connecting to the network.