



Moorlands Primary School



“Anything is Possible!”

Computing Policy

Introduction

This policy outlines the teaching, organisation and management of the Computing at Moorlands Primary School. The school’s policy for Computing is based on the National Curriculum 2014. The implementation of this policy is the responsibility of all the teaching staff.

Moorlands Curriculum is designed with the purpose that:

Language + Questioning = Communication.

The teaching and learning in Computing follows our teaching and learning policy which is based on the Rosenshine’s principles of instruction (2012).

These are drawn from the following three sources:

1. Research in cognitive science
2. Research on the classroom practices of master teachers
3. Research on cognitive support to help pupils learn complex tasks

What is Computing?

The use of computers, technology and computer systems is an integral part of the National Curriculum and knowing how they work is a key life skill. In an increasingly digital world there exists a wealth of software, tools and technologies that can be used to communicate, collaborate, express ideas and create digital content. At Moorlands Primary School, we provide a broad and balanced computing education with a structured, progressive, approach to the learning how computer systems work, the use of IT and the skills necessary to become digitally literate and participate fully in the modern world.

Purpose:

- To develop pupils’ computational thinking skills that will benefit them throughout their lives.
- To meet the requirements of the national curriculum programmes of study for Computing providing a broad and balanced curriculum for all pupils understanding and applying the fundamental principles of computer science, including logic, algorithms, data representation, and communication.
- To respond to new developments in technology
- To equip pupils with the confidence and skills to use digital tools and technologies throughout their lives.
- To develop understanding of how to use computers and digital tools safely to develop responsible, competent, confident and creative users of information and communication technology.

How does Computing look at Moorlands?

Questioning lies at the heart of the Computing curriculum. Each lesson begins with a key question for pupils to consider and is sequenced so that, where appropriate, it builds on the learning from the previous lesson. Exploratory tasks foster a deeper understanding of a concept, encouraging pupils to apply their learning in different contexts.

Weekly/monthly reviews allow the recall of recently learned material so that it becomes embedded within long term memory.

Early Years Foundation Stage

We recognise that the Early Years Foundation Stage should give pupils the opportunity to develop their computing skills, based on the areas in Development Matters. Children are encouraged to develop and make progress and accuracy when using the mouse and keyboard.

The development of these basic skills means that EYFS pupils are ready to progress to the next stage of our computing curriculum. The EYFS Computing curriculum focus is on basic skills, understanding how a computer works and use software to develop fine motor skills.

Key stage 1

Pupils develop their knowledge in 'unplugged' computing sessions and sessions working with digital devices. Computing is intrinsically linked to technology and therefore requires that pupils experience and use a range of digital tools and devices; these may follow a series of 'unplugged' sessions where pupils develop their understanding. Depending on suitability, pupil learning is captured individually, as a group or practically.

By the end of key stage 1 pupils are taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following a sequence of instructions
- write and test simple programs
- use logical reasoning to predict the behaviour of simple programs
- organise, store, manipulate and retrieve data in a range of digital formats
- communicate safely and respectfully online, keeping personal information private, and recognise common uses of information technology beyond school.

Key stage 2

By the end of key stage 2 pupils are taught to:

- design and write 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; generate appropriate inputs and predicted outputs to test programs
- use logical reasoning to explain how a simple algorithm works 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
- describe how internet search engines find and store data; use search engines effectively; be discerning in evaluating digital content; respect individuals and intellectual property; use technology responsibly, securely and safely

Sequencing content

We use the National Centre for Computing Education as the basis of our planning across school.

Topic areas are organised into six units:

1. Computer systems and networks
2. Creating media
3. Programming A
4. Data and information
5. Creating Media
6. Programming B

Moorlands follows medium and short term planning based on the NCCE Primary Computing lessons.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Computer systems and networks: Technology around us	Creating media: Digital painting	Creating media: Digital writing	Data and information: Grouping data	Programming A: Moving a robot	Programming B: Introduction to animation
Year 2	Computing systems and networks: IT around us	Creating media: Digital photography	Creating media: Making music	Data and information: pictograms	Programming A: Robot algorithms	Programming B: An introduction to quizzes
Year 3	Computing systems and networks: Connecting computers	Creating media: Animation	Creating media: Desktop publishing	Data and information: Branching databases	Programming A: Sequence in music	Programming B: Events and actions
Year 4	Computing system and networks.	Creating media: Photo editing	Data and information: Data logging	Creating media: Audio editing	Programming A: Repetition in shapes	Programming B: Repetition in games
Year 5	Computing systems and networks: Sharing information	Creating media: Vector drawing	Creating media: video editing	Data and information: Flat-file databases	Programming A: Selection in physical computing	Programming B: Selection in quizzes
Year 6	Computing systems and networks: communication	Creating media: 3d modelling	Creating media: web page creation	Data and information: Spreadsheets	Programming A: Variables in games	Programming B: sensing

Continuity and Progression:

- The units for key stages 1 and 2 are based on a spiral curriculum. Each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design

reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made.

- Teachers follow the Computing curriculum which is based on the NCCE Primary Computing planning.
- Key Questions drive the development of pupil's knowledge and skills.
- Individual, paired and group work will be used across lessons.
- 'Unplugged' and sessions working with digital devices will develop pupil knowledge.
- Pupils complete a reflection to demonstrate what knowledge and skills they have developed.
- Teachers assess the pupils using the National Curriculum 2014 guidance.

Skills within Computing

Across our Computing curriculum, and alongside the National Curriculum, we have identified the main skills needed for our pupils to gain a strong understanding of Computing.

Our Computing progression map focuses on skill progression as well as knowledge to ensure that our pupils make good progress in all areas of Computing. For further information on this, please see our Computing progression map.

Algorithms – Being able to comprehend, design, create and evaluate algorithms.

Computer networks – Understand how networks can be used to retrieve and share information and how they come with associated risks.

Computer systems – Understand what a computer is and how its constituent parts function together as a whole.

Creating media – Select and create a range of media including text, images, sounds and video.

Data and information – Understand how data is stored, organised and used to represent real-world artefacts and scenarios.

Design and development – Understand the activities involved in planning, creating and evaluating artefacts.

Effective use of tools – Use software tools to support computing work.

Impact of technology – Understand how individuals, systems and society as a whole interact with computer systems.

Programming – Create software to allow computers to solve problems.

Safety and security – Understand risks when using technology and how to protect individuals and systems.

Spiral curriculum

The units for key stages 1 and 2 are based on a spiral curriculum. This means that each of the themes is revisited regularly (at least once in each year group), and pupils revisit each theme through a new unit that consolidates and builds on prior learning within that theme. This style of curriculum design reduces the amount of knowledge lost through forgetting, as topics are revisited yearly. It also ensures that connections are made even if different teachers are teaching the units within a theme in consecutive years.

Assessment and Feedback

Children will be provided with feedback either verbally or through written marking. When marking work teachers should adhere to the school's Feedback and Marking Policy. Assessment is monitored through the use of Exit Tickets which provide a question relating to that lesson's learning. Staff assess whether

pupils are working on track, below or above expectations for that point in the year and record this on Insight along with assessment against the curriculum objectives. Assessment is supported by the NCCE Primary Computing planning and summative assessments. The subject lead will also interview pupils to assess their knowledge and gain an understanding of how pupils are engaging with the Computing curriculum.

Monitoring and Review

Monitoring of the standards of children's work and of the quality of teaching in Computing is the responsibility of the Computing lead. The Computing lead provides feedback to staff indicating both areas of strengths and further areas of development. The work of the Computing lead also involves supporting colleagues in the teaching of Computing, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. Curriculum updates are shared at the Pupil and Curriculum Committee formed by members of the governing body. Pupils will be consulted to gain a 'pupil voice'.

Home – School links

At the beginning of each term, parents are provided with a Curriculum Newsletter which informs parents of the Computing topic being taught.

Inclusion

Teachers set high expectations for all pupils. They will use appropriate assessment to set ambitious targets and plan challenging work for all groups, including:

- More able pupils
- Pupils with low prior attainment
- Pupils from disadvantaged backgrounds
- Pupils with SEND
- Pupils with English as an additional language (EAL)
- LAC children and Service children

Teachers will adapt lessons so that pupils with SEN and/or disabilities can access computing, wherever possible and as long as possible; scaffolded learning, visuals, peer or adults support may be some of the methods to support pupils. Teachers will also take account of the needs of pupils whose first language is not English or those who have language difficulties and will model in small steps using visuals where possible.

Online safety

There are links between the content of the lessons and the national curriculum and Education for a Connected World framework. Some objectives in the Education for a Connected World framework are covered in the Teach Computing curriculum: the NCCE plans for the coverage required for the computing national curriculum. Other objectives, where more suited, are covered in Jigsaw PSHE.

In addition to the computing policy, the following policies are also available:

- Online Safety policy
- Acceptable use Policies (KS1 and KS2) Policy