

Wood Fold Primary School

Computing Policy

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Next review (date):	Ongoing to reflect practice

At Wood Fold, we aim to deliver a high-quality computing education which equips pupils to use computational thinking and creativity to understand and change the world. The role and importance of computing within schools continues to increase as technology is ever developing. At Wood Fold, we believe that our pupils should be given the opportunity to develop their computing skills in order to equip them for later life.

Aims

1. To provide a safe and secure environment both inside and outside the classroom where children can learn computing skills and develop their understanding of different computing concepts.
2. To challenge children with thought provoking questions about how computers work and how they are used in the community and throughout the world.
3. To develop knowledge of computing systems including how programmes function and how networks are used to connect people.
4. To develop a range of investigative and problem-solving skills, which promote each child's understanding of how computers can be used both inside and outside the classroom.
5. To build links with how computers are used outside of school and provide children with experiences that allow them to participate in field work.
6. To provide the children with a range of high-quality resources such as: iPads, Laptops, VR headsets, 3D printers, Micro:bit programming devices and clear and detailed work books that enable the children to work at their own pace to programme, debug and explore the world of computers.

Intent

The computing curriculum is separated into 3 main areas: Computer Science, Information Technology and Digital Literacy.

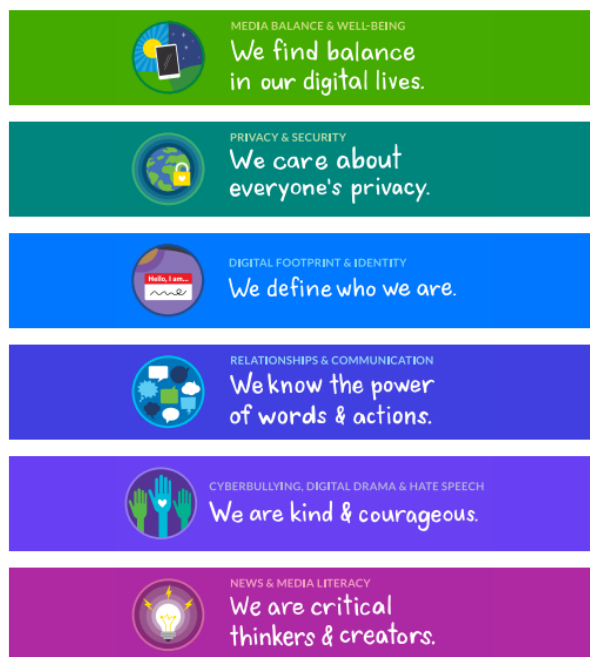
Computer science will introduce children of all ages to understanding how computers and networks work. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. It will also give all children the opportunity to learn basic computer programming, from simple floor robots in Years 1 and 2, right up to creating on-screen computer games and programmes by Year 6.

Information technology will allow the children to understand the functional purposes of computers, such as collecting and presenting information, using spreadsheets, word processing software or using search technology.

Digital literacy is about the safe and responsible use of technology, including recognising its advantages for collaboration or communication. It also provides children with an understanding of how they can express

themselves and develop their ideas at a level suitable for the future workplace and as active participants in a digital world.

At the start of each half term, each year group will deliver a Digital Citizenship lesson which over the course of the year will have covered the 6 Core Topics:



Digital citizenship is the responsible use of technology to learn, create, and participate. The Digital Citizenship Curriculum addresses critical issues facing children in a fast-changing world of media and technology. The innovative lessons teach students to think critically and develop the habits of mind to navigate digital dilemmas in their everyday lives.

The intent of our Computing curriculum is mapped out on Long Term plans. The units are carefully selected to coincide with core texts or specific subjects so that the units can provide a base for cross curricular lessons. At Wood Fold we aim for all subjects to incorporate computing whether it is through spreadsheets and graph work to green screens and virtual reality experiences. Detailed schemes of work are provided for teachers for each computing unit, forming the medium-term plan. Teachers use this to ensure key concepts, knowledge, skills and vocabulary are taught. Short-term planning is then used to ensure the use of assessment in planning subsequent lessons and to ensure individual next steps are catered for. Each year group is provided with a carefully created booklet for each unit, which provides the children with guidance on how to use the programmes they are using.

Each of the booklets challenge the children to understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation. The children experience a range of computing problems, which they have to analyse, solve and explain. They then evaluate and apply their knowledge, to solve new problems and algorithms.

Using carefully planned **Learning Ladders** (see below), the teachers in each year group plan for depth of knowledge using Rosenshine's Medium Term Planning, ensuring component parts (tasks in different lessons) are delivered effectively to achieve the composite task. For example, in wanting the children to *understand why we use algorithms* (component task), *they are asked to recognise how we use specific instructions offline to complete different tasks* (composite tasks).

Date: Unit: Design write and debug programs		
<p>The grid below helps to identify the journey pupils make towards mastering this objective. It can be used by the teacher to keep an on-going check on progress or more likely placed in the pupils' books so that they can keep their own checks.</p> <ul style="list-style-type: none"> • 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 		
Create a game that includes text	Me	My Teacher
Add text script to create an information game.		
Add and change script to alter how a sprite interacts with the interface.		
Create and edit a set of sprites		
Create a background		
Identify key parts of the Scratch interface.		

Each rung on the ladder builds to form the objective set out in the National Curriculum that we want the children to learn and retain; to achieve this, teachers use Medium Term Planning which follows the structure linked to Rosenshine's Principles with sections set out for teachers to consider how they will break down into smaller steps. This is a careful sequence of knowledge which builds on prior knowledge. The teaching for each 'rung' will involve multiple sessions (containing component tasks) to provide depth of knowledge for that learning goal.

Learning Ladders, which set out the sequence of learning objectives for a unit, are shared at the start of each lesson. The teacher will highlight the specific rung that the children are working on and share the learning objective for that lesson as well as the key concept they will be covering. In addition, there will be discussion around where this lesson fits into the sequence of learning, what they have done so far and where they are going next, in order that they are finally able to meet the overall objective from the National Curriculum.

The ladders enable the children to see that the lessons are progressive and successive with one lesson building upon the next allowing them to build a schema of knowledge. It is crucial the children see the connections between their lessons in order for them to deepen and widen their understanding, rather than see each lesson as a separate chunk of information detached from the previous one.

Pre- Learning Tasks

In Computing, children will be tested on any relevant information they have been taught previously which should link to their new learning. These PLT's allow teachers to determine whether prior knowledge and understanding is secure in this unit before starting; it also identifies any common misconceptions. The PLT is at the beginning of the children's Computing booklets and is completed at the beginning of the new topic or learning objective.

Implementation

Our Computing curriculum is progressive; in KS1, children explore the use of algorithms, what they are and how they are implemented as programs on digital devices. Through a series of sessions, they will create their own simple algorithms and debug simple programs. They will use logical reasoning to predict the behaviour of simple programmes and use technology purposefully to create, store, organise, manipulate and retrieve digital content. They will also become aware of how technology is used beyond school and how to use technology safely and respectfully.

As they progress into KS2 the children will design, write and debug programmes that accomplish specific goals, including: controlling physical systems and solving problems by decomposing them into smaller parts. They will use sequence, selection and repetition in programmes and work with variables. The children will also become aware of how computer networks are used, how search engines use specific key words to enable efficient searches and how technologies can provide opportunities for communication and collaboration. They will also use technologies safely, respectfully, responsibly and be aware of acceptable and unacceptable behaviour as well as how to report such behaviour and how to keep personal details safe.

Computing is taught weekly within the timetable, providing the children with effective in-depth lessons that promote learning and development of the new skills. Computing lessons are sometimes cross-curricular, for example when the unit is teaching skills in carrying out research. Therefore, opportunities will also be sought to make use of and apply computing skills across the curriculum. For example, from the use of Computer Aided Design (CAD) in Design Technology and geotagging for Geography to Virtual Reality experiences to help promote ideas when writing a setting description in English.

The pupils at Wood Fold have access to high quality digital learning resources, such as laptops, I-PADS, green screens, VR headsets and 3D printers. The computing leader and Senior Leadership Team will continually monitor the resources required to deliver the Computing element of the national curriculum.

At Wood Fold we provide the children with a safe and secure area to work. Teachers check all links / searches before sharing them with pupils to ensure the content is appropriate. When children are using search engines to carry out research, Wigan Council has provided a secure set of protocols which allow children to search safely. Teachers also have access to Impero, which allows the teacher to monitor the children regularly during Computing lessons to support their learning and ensure children are following the behavioural expectations. High expectations for behaviour are held by all teachers during Computing lessons, as with all lessons.

When using a laptop, users are required to accept or decline the 'Securus Acceptable Use Policy'. This policy is shared with the children regularly, ensuring the children understand what is acceptable use of the hardware, software and internet.

The acceptable use policy is verbally shared with children when they use an I-PAD as Apple technology is not compatible with the 'Securus' software.

All classrooms have an interactive board installed, a desktop computer and a visualiser to support teaching.

Each child has login credentials including a username and password to log on to the school server, this provides the children with a safe and secure workspace.

All pupils in school have been set up with a school email address. The purpose of this is to facilitate the use of Microsoft Teams for remote learning.

Impact

At Wood Fold, all children are given equal opportunities to achieve in Computing through a well-constructed curriculum. The impact of our curriculum is measured by how well children achieve in knowing more, remembering more and doing more. This is reflected in their work that is consistently of a high quality. We also know this because of assessment tools such as formative assessment, pupil voice, end products they create and completion of learning ladders.

The End of Unit Assessment informs the teacher of which areas of learning each child still has gaps and where children have reached a greater depth understanding, and these are noted down on an assessment grid (see below). Teachers will then decide on what corrective action is needed to ensure that the child is able to achieve the objective(s) not met. This may include re-teaching areas of learning if substantial class gaps occur or setting targeted homework / research tasks to address specific gaps for individuals. Results on these assessments demonstrate retention of knowledge and sound understanding.

Computing Assessment – Year 3

Programming and Algorithms (Summer)

<u>Skill</u>	<u>Not meeting expectation</u>	<u>Exceeding expectation</u>
<u>Programming and algorithms - Scratch</u> Children can create a background		
Children can use script to programme sprites to move and interact with each other		
Children can add text script to create an information-based game		
Children can troubleshoot and debug errors		
<u>Digital Citizenship – Cyberbullying, digital drama and hate speech</u> Children can identify 'mean' behaviours online		
Children can discuss the steps to follow if they see or experience someone being mean online		
<u>Digital Citizenship – News and media literacy</u> Children can define what it means to 'credit' someone's work		
Children know the three things to list to 'credit' someone [Author], [Title], [Website]		

At the end of the year, teachers are asked to make a summative assessment of the children in Computing, by completing the following grid.

Y3 Computing End of Year Assessment Information

<u>Initials of children working towards the expected standard</u>	<u>Initials of children who are showing some more in-depth knowledge</u>

This grid identifies those who are working towards the expected standard, those who are showing more in-depth knowledge, and consequently those at expected. This information is passed to subject leaders who will have a secure understanding of children’s Computing knowledge across school.

Teaching Computing to children with special educational needs and disabilities:

At Wood Fold we are an inclusive school and we provide learning opportunities that are matched to the needs of our pupils whilst holding high expectations for all. We endeavour to provide a broad and balanced curriculum to all pupils, including the teaching of Computing. Computing, as with all other subjects, should be appropriately differentiated to meet the needs of all pupils within the lesson, in line with our teaching and learning policy, such as breaking down the activity in to smaller steps to support children to feel more able to approach the task.

We also use computing where appropriate to support children’s learning across the curriculum, personalised technology for pupils with visual difficulties, I-PADS for children to access photographs / visuals and record information about their school day to share with parents.

Related policies:

- Online safety policy
- ICT and Internet Acceptable Use Policy
- Contingency Plan including Remote Learning Plan

In the occurrence that a member of staff needs to take a laptop home, for use related to work only, the laptop must be signed out and number recorded. Laptops will not work at home unless they have been specifically configured to do so for a particular individual by our IT Providers Blue Orange. When being returned, the laptop should be signed back in as returned and dated.