Willerby Carr Lane

Primary School

Computing Policy

POLICY MANAGEMENT

Approved by	Full Governing Body
Date approved	Spring 2023
Effective date	
Next review date	Spring 2026
Version Control	The most up to date version of this document is held on the school's intranet

Digital Vision

Purpose

Computing should:

- equip pupils to use computational thinking and creativity to understand and change the world.
- teach the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming.
- ensure that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology as active participants in a digital world.

Aims

At Willerby Carr Lane Primary School, we aim to provide quality teaching and learning of computing to promote:

- understanding of fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
- analysis of problems in computational terms
- repeated practical experience of writing computer programs in order to solve problems
- responsible, competent, confident and creative users of information and communication technology
- safe use of technology

Making Computing Relevant

At Willerby Carr Lane Primary School, we ensure that computing learning embraces changes in the technologies and their social applications. Our e-Safety co-ordinator keeps up to date with new and emerging e-safety issues and adapts our e-safety curriculum, parental support and advice accordingly.

Curriculum Intent

Our school curriculum sets out the knowledge and skills that pupils will gain at each stage. It is clear what end points the curriculum is building towards and what children need to know and be able to do to reach those end points. This is set out in detail in a series of computing 'knowledge organisers' produced by school to reflect the current Computing curriculum that we follow. The knowledge organisers detail:

- What children should already know before starting a unit of work
- What children will know by the end of the unit
- The associated key vocabulary children are expected to learn and understand
- The opportunities and activities for developing computing skills and knowledge.
- How these skills link to other areas of the curriculum

Curriculum Implementation

Through high quality Computing teaching, pupils:

- fully understand how to use technology as a tool to enhance and improve work quality, efficiency and lifestyle.
- confidently use a range of technology safely and responsibly, especially online communication.
- understand how computers and networks function and how they can be programmed to complete tasks effectively.
- understand and apply the process of programming including identifying errors in algorithms and designing and creating programme inputs that lead to successful outputs.

Lesson design is consistent across the school.

- On starting a unit there should be a reminder of the lessons learned in previous units and particularly those with similar skills.
- The programme of study is designed to develop skills progressively across each year group and across school.
- Children should experience working in groups and alone.
- Where appropriate, unit plans should be taught with the following structure:
    - Analysis of the technology that already exists and link to real world.
    - Teaching and practice to master the skills required to enable the children to be successful in using the technology.
    - Planning
    - Creation
    - Evaluate and develop solutions.

Children are taught to:

- verbalise and demonstrate their reasoning and understanding with open ended questions at regular intervals.
- be challenged by critical questions and problems.

- develop the ability to choose which technology they wish to use for a given task.

Computing in the Foundation Stage

Computing in the Foundation Stage is taught under the umbrella of 'Understanding of the World'. The children are supported in developing the knowledge, skills and understanding that helps them recognise that a range of technology is used in places such as homes and schools.   Children learn to:

- understand their place in a world that is increasingly dominated by technology
- be curious about technology in real world contexts: what happens when mum or dad puts their card in the machine outside the bank? what is the machine called? why do they have to type a number in? why do they keep it secret?
- select and use technology for particular purposes (digital cameras, audio recorders, tablet computers, phones (smart or otherwise) and simple, programmable robots such as Bee-Bot)

The foundations of computational thinking are laid in the EYFS in the context of solving problems - carrying water up the hill; solving (or making) jigsaws; building models; making a Bee-Bot follow a course; spotting and extending a pattern. When children are faced with these problems, the questions that Early Years practitioners would naturally be posing can encourage computational thinking:

- Logical reasoning - What will happen if I do this? How do you know?
- Algorithms - What do I need to do to solve this? Is there a better way?
- Decomposition - Can we break this problem up? Could we each do different jobs to solve the problem?
- Patterns - Have you solved something like this before? What did you do then? What's changed?
- Abstraction - What's the most important thing here? Maybe we can draw a picture of this?
- Evaluation - What went well? Which way worked best? What would you do differently next time?
- Debugging - common in Early Years with children 'learning by trial and error' and 'persisting with activities when challenges occur.

Cross Curricular Opportunities

The content and positioning of computing units is designed to develop a coherent and progressive computing curriculum which supports quality teaching and learning. Links are only made with other subjects where they can meaningfully and significantly contribute to the teaching of those areas. Possible opportunities include:

- Maths – logic, problem-solving and calculation is intrinsically bound up with programming. Spreadsheets are intrinsically related to calculation and graphing
- Design Technology – computer control is an essential part of Design Technology. Wearable technologies can also be incorporated into products.
- Science – computer control can be used in partnership with projects such as the electrical 'frustration' wire game, where a Microbit can be programmed to count the failures.

- Art – children can use green screens or digital manipulation within art.
- PSHE – online communication and safety
- Reading – use of stories to support children's understanding of internet safety

Assessment, Recording and Reporting

Assessment is carried out in line with the school's Assessment Policy and is based on the principles of Assessment for Learning. Assessment can take place at all appropriate stages of a lesson, but particularly within the plenary focussing on the relevant learning objectives to that lesson.

We assess how well pupils embed concepts in their long-term memory and apply them fluently; developing their understanding, rather than memorising disconnected facts. Teachers assess how well children are able to answer the key questions which are set out in our knowledge organisers: the depth of their answers and clarity of their explanations. For each unit pupils are assessed to have met the expected targets, exceeded them or not met them.

Equal Opportunities

It is the responsibility of teachers to ensure that all pupils, irrespective of gender, ability, race or SEND, have access to the curriculum and make the greatest progress possible. Teachers set suitable learning challenges and respond to each child's different needs.

If a pupil needs specialist hardware / peripherals in order to access the Computing curriculum the School will liaise with ESPD to source the appropriate equipment.

Pupils will not be 'e-impoverished' / discriminated against because they do not have access to a computer outside of school.

Role of the Subject Leader

The computing subject leader is responsible for:

- Ensuring progression and continuity across the key stage through the development of the long-term plan.
- Supporting colleagues in the implementation of the short-term planning and providing support within each unit of work.
- Monitoring progress and standards within the subject.
- Keeping up to date with developments in computing and disseminating information to the rest of the teaching staff.