St Luke's Halsall - Computing Curriculum Policy

Intent and Implementation

INTENT

We use a structured sequence of lesson to ensure that we cover the skills required to meet the aims of the national curriculum. The content allows for a broad, deep understanding of computing and how it links to children's lives. It offers a range of opportunities for consolidation, challenge and variety. This allows children to apply the fundamental principles and concepts of computer science. They develop analytical problem-solving skills and learn to evaluate and apply information technology. It also enables them to become responsible, competent, confident and creative users of information technology.

There is now a great deal of emphasis on the use of ICT and, in particular, computer skills to enhance the learning in all the subjects of the curriculum. In addition to our Computing Suite we also have sets of iPads and are continually looking to use a variety of computer programs to supplement the diverse nature of the curriculum. We aim to enable all the children to become competent and confident users of ICT. As the safety of our children is paramount we undertake work on Internet safety working with the children to understand not only the positive use of the internet and social media, but also the negative elements. We aim to create a climate of trust where the children feel comfortable talking to the staff about any worries or concerns they may have.

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. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and 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.

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.

Key stage 1

Pupils should be taught to:

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

Key stage 2

Pupils should be taught to:

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

Learning and Development – Computing in the Early Years

St Luke's focuses on ensuring young children learn through play and exploration, with support for each individual. We encourage children to develop imagination, to get actively involved in learning and to make decisions. We make every attempt to develop children's creative and critical thinking, balancing the need for both the children and adults to lead the learning.

The EYFS framework is structured very differently to the national curriculum as it is organised across seven areas of learning rather than subject areas.

This table below demonstrates which statements from the 2020 Development Matters are prerequisite skills for computing within the national curriculum. The table below outlines the most relevant statements taken from the Early Learning Goals in the EYFS statutory framework and the Development Matters age ranges for Three and Four-Year-Olds and Reception to match the programme of study for computing.

The most relevant statements for computing are taken from the following areas of learning:

Personal, Social and Emotional Development
Physical Development
Understanding the World
Expressive Arts and Design

Computing			
Three and Four-Year-Olds	Personal, Social and Emotional Development		• Remember rules without needing an adult to remind them.
	Physical Development		• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World		• Explore how things work.
Reception	Personal, Social and Emotional Development		• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health and wellbeing: -sensible amounts of 'screen time'.
	Physical Development		• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
	Expressive Arts and Design		• Explore, use and refine a variety of artistic effects to express their ideas and feelings.
ELG	Personal, Social and Emotional Development	Managing Self	• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly.
	Expressive Arts and Design	Creating with Materials	• Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

IMPLEMENTATION

Computing is taught in units of work each half-term. This is through a mixture of paper-based and digital lessons depending on the topic of the unit. Every pupil has a Computing book to evidence their work. This book begins in year one and travels with each pupil as they move up through the school.

Using, revising and expanding on Computing related vocabulary is the focus at the start of every Computing lesson with pupils participating in 'Computing Vocabulary Olympics'. This gives pupils opportunity to consistently revise previously taught vocabulary and ensure thorough understanding.

The units that are taught ensure full National Curriculum coverage and offer a wide variety of different learning opportunities for pupils. Learning is built on from previous year groups to make sure progress is consistent. Each lesson contains revision, analysis and problem-solving. Through the sequence of lessons, we intend to inspire pupils to develop a love of the digital world, see its place in their future as well as giving staff confidence. Our lessons help pupils to build on prior knowledge at the same time as introducing new skills and challenges. In KS1, the focus is on developing the use of algorithms, programming and how technology can be used safely and purposefully. In KS2, lessons still focus on algorithms, programming and coding but in a more complex way and for different purposes. Children also develop their knowledge of computer networks, internet services and the

safe and purposeful use of the internet and technology. Data Handling is featured more heavily in UKS2. Skills learnt through KS1 and LKS2 are used to support data presentation.

At St Lukes, online safety is of paramount importance. Pupils all complete an online safety unit of work in the Spring term. In addition to this, pupils participate in an online safety day in February each year. However, we discuss online safety at every opportunity, not just in standalone Computing lessons. We aim for pupils to speak confidently about online safety and to create a climate of trust where pupils feel comfortable talking to the staff about any worries or concerns they may have.

In additional to their weekly Computing lesson, pupils are given the opportunity to use and apply skills they learn throughout their time in school by completing a series of additional Computing lessons. In KS2, this is project based whereby the end of the year, pupils present a Computing based project they have been working on all year to their peers. In KS1, this is stand alone lessons. In both cases, pupils are able to use what they have been learning in their Computing lessons and apply their skills to a different task. This is evidenced by pupils having a separate Computing book to show their progress throughout their school journey.

ASSESSMENT

To ensure consistency, all year groups will be assessed based on the curriculum statements made available on Sonar. All teachers ensure that their pupils are regularly updated on the system to ensure that pupils' progress is charted on a termly basis. This is monitored by the computing lead. Pupils work is evidence either in their Computing book or saved onto their individual drives. Teachers know what work they should be printed as evidence as outlined in the schemes of work for their year group.

EARLY YEARS

At St Lukes, we aim for pupils to transition into year one knowing basic Computing skills. Throughout their time in Reception, pupils develop their skills by being introduced to using appropriate Computer software, iPads and bee-bots. In the Summer term, we aim for pupils to complete a small unit of work in preparation for them transitioning into year one. This unit aims to develop basic IT skills such as knowing how to turn a computer on and off as well as developing their skills in using a mouse.