Pilgrims Way Primary School

Computing Policy

Published: Autumn Term 2021/22

Review Date: Autumn Term 2022/23

Intent:

The National Curriculum 2014 for computing aims to ensure that pupils will develop their understanding of computing concepts and problem solving through practical experience. This will give children the skills they need to become competent and creative users of information and communication technology both at present and in future environments.

The national curriculum for computing has four main 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.**

Foundation stage

Pupils will;

- Start to reason about the world around them and know that technology can be used in a range of places.

- Know how to use mechanical and electronic toys and simple equipment. They will start to understand how they work through cause and effect.

- Begin to understand algorithms through sequencing for example lining up, tidying up and taking turns or through sequencing events during role play.

- Select and use technology to perform simple tasks.

KS1

By the end of KS1 pupils are expected to;

- Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions

For example pupils might create algorithms to sequence simple tasks like how to get dressed, share some sweets or work out some spelling rules.

- Create and debug simple programs

Building on pupils' understanding of algorithms to design and make simple programs using programmable toys such as bee-bots or by using online software such as Scratch, code.org and Kodu.

- Use logical reasoning to predict the behaviour of simple programs

This can include predicting what will happen when playing a computer game, using an online program or pupils predicting the behaviour of programs which they have written.

- 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

KS2

Pupils in KS2 will build on the computing skills covered in Foundation Stage and KS1. By the end of KS2 pupils are expected to;

- Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts

For example design and create a simple game. Thinking logically about how coding works and using reasoning to identify potential bugs.

- 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

Pupils could be given a range of algorithms to explore; using logical reasoning to 'think through' each step in order to predict what the outcome of the algorithms might be and explain their predictions. Examples might include algorithms for mathematical calculations, for solving mazes, for guessing a number or for looking up a definition in a dictionary.

- 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.

Build on pupils' previous understanding of using technology and begin to understand different services provided when systems are connected through networks.

- Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.

Explore search engines including how they give results to search queries and how they are ranked.

- 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

Differentiation and SEN

All children are entitled to the same computing and technology access. Tasks can be modified or adult support provided for children with difficulties. Lessons will provide learning objectives for all abilities and greater depth extension activities to deepen understanding.

Cross curricular links

There will be many cross curricular links with other subjects such as maths, science, English and design technology. PSHE will be linked through a continuous E-safety theme.

Health & Safety

There will be a continuous theme of E-safety where children are encouraged to use technology safely, respectfully and responsibly. Any safeguarding issues arising from concerns with E-safety will be referred to the Designated Safeguarding Lead.

Assessment and recording

Teachers will assess through observation of progress against the National Curriculum objectives and record their assessments on PW foundation assessment sheets. Subject lead and teachers will also assess through pupil voice.