Computing Curriculum Map

Intent:

The curriculum has been designed to empower pupils with virtues that enable them to excel academically and spiritually inspiring them to serve humanity selflessly, with an abundance of love, compassion and forgiveness.

Our curriculum is constructed around our vision to ensure we remain:

Faith-inspired: learning from the wisdom of religion
At Primley Wood we aim to foster holistic growth and character development. We focus on nurturing compassionate, responsible human beings who aspire for excellence in all aspects of life. Exploring religious wisdom allows pupils to respect diverse faith traditions and the beliefs of those without faith.

Virtues-led: We aim to develop pupils to become compassionate, responsible human beings
This is done through promoting virtues which we believe form the foundation of all goodness and prepares children for lifelong learning. Our curriculum is carefully enriched to allow experiences where our pupils, teachers and parents alike learn to grow through a conscious focus on virtues. Our virtues-led education approach helps to provide guidance to enable pupils to understand their choices in order to help lead better lives. Our pupils become self-reflective and flourish; they are able to build strong, meaningful relationships and understand their responsibilities to the wider world.

Aspiring for Excellence: in all that we do.
Our pupils and staff alike aim to become the best human beings they can possibly be, in all aspects of spiritual, social, intellectual and physical life. We foster a school culture which inspires optimism and confidence, hope and determination for all to achieve their best possible. This is accomplished through a rich and challenging curriculum, along with excellent teaching to nurture awe and wonder. Pupils gain a breadth and depth of knowledge and a love of learning to achieve their full potential.

The curriculum at Primley Wood Primary School has been carefully crafted to be broad, balanced and stimulating, giving every pupil the opportunity to be knowledgeable, multi-skilled, highly literate, highly numerate, creative, expressive, compassionate and confident people.

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, preparing them for the future workplace and enabling them to be active participants in a digital world.

The curriculum is necessarily aspirational, focused on excellence and on securing in all learners a love of learning through the acquisition of knowledge and an understanding of the world around them.

Implementation:

At Primley Wood we are guided by the Teach Computing Scheme of Work. The Teach Computing curriculum usews the National Centre for Computing Education's computing taxonomy to ensure comprehensive coverage of the subject. All learning outcomes can be described through a high- level taxonomy of ten strands, ordered alphabetically as follows:

- Algorithms- Be able to comprehend, design, create and evaluate algorithms.
- Computer networks — Understand how networks can 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
- 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 computing 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

The Teach Computing curriculum is structured into units which are based on a spiral curriculum, this allows each of the themes to be 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.

Curriculum Overview

Year	Half Term 1	Half Term 2	Half Term 3	Half Term 4	Half Term 5	Half Term 6
EYFS						
	Computing Systems and networks	**Creating Media**	**Programming A**	**Data and Information**	**Creating Media**	**Programming B**
1	**Technology around us** Recognising technology in school and using it responsibly.	**Digital painting** Choosing appropriate tools in a program to create art, and making comparisons with working non-digitally.	**Moving a Robot** Writing short algorithms and programs for floor robots, and predicting program outcomes.	**Grouping Data** Exploring object labels, then using them to sort and group objects by properties.	**Digital Writing** Using a computer to create and format text, before comparing to writing non-digitally.	**Programming Animations** Designing and programming the movement of a character on screen to tell stories.
2	**Information Technology around us** Identifying IT and how its responsible use improves our world in school and beyond.	**Digital Photography** Capturing and changing digital photographs for different purposes.	**Robot Algorithms** Creating and debugging programs, and using logical reasoning to make predictions.	**Pictograms** Collecting data in tally charts and using attributes to organise and present data on a computer.	**Digital Music** Using a computer as a tool to explore rhythms and melodies, before creating a musical composition.	**Programming Quizzes** Designing algorithms and programs that use events to trigger sequences of code to make an interactive quiz.
3	**Connecting computers** Identifying that digital devices have inputs, processes, and outputs, and how devices can be connected to make networks.	**Stop-frame animation** Capturing and editing digital still images to produce a stop-frame animation that tells a story.	**Sequencing sounds** Creating sequences in a block-based programming language to make music.	**Branching databases** Building and using branching databases to group objects using yes/no questions.	**Desktop publishing** Creating documents by modifying text, images, and page layouts for a specified purpose.	**Events and actions in programs** Writing algorithms and programs that use a range of events to trigger sequences of actions.
4	**The internet** Recognising the internet as a network of networks including the WWW, and why we should evaluate online content.	**Audio production** Capturing and editing audio to produce a podcast, ensuring that copyright is considered.	**Repetition in shapes** Using a text-based programming language to explore count-controlled loops when drawing shapes.	**Data logging** Recognising how and why data is collected over time, before using data loggers to carry out an investigation.	**Photo editing** Manipulating digital images, and reflecting on the impact of changes and whether the required purpose is fulfilled.	**Repetition in games** Using a block-based programming language to explore count-controlled and infinite loops when creating a game.

5	**Systems and searching** Recognising IT systems in the world and how some can enable searching on the internet	**Video Production** Planning, capturing, and editing video to produce a short film.	**Selection in physical computing** Exploring conditions and selection using a programmable microcontroller.	**Flat-file databases** Using a database to order data and create charts to answer questions.	**Introduction to vector graphics** Creating images in a drawing program by using layers and groups of objects.	**Selection in quizzes** Exploring selection in programming to design and code an interactive quiz.
6	**Communication and collaboration** Exploring how data is transferred by working collaboratively online.	**Webpage creation** Designing and creating webpages, giving consideration to copyright, aesthetics, and navigation.	**Variables in games** Exploring variables when designing and coding a game.	**Introduction to spreadsheets** Answering questions by using spreadsheets to organise and calculate data.	**3D modelling** Planning, developing, and evaluating 3D computer models of physical objects.	**Sensing movement** Designing and coding a project that captures inputs from a physical device.

Transitions:

Moving from EYFS to KS1:

Our learning journey starts in the Early Years where children are exposed to using various forms of technology such as a digital camera to take photographs of their environment or work they have completed or the use of an IPad to record videos and access learning APPs. Early use of digital technology improves children's language skills and promotes social development and creativity. Whilst allowing pupils to work successfully towards the Development Matters statements and Early Learning Goals, the Computing elements taught in the EYFS provide a solid foundation of computing skills and knowledge for children to transition successfully onto Key stage 1.

Moving on to KS3:

After exposure to our Computing curriculum, pupils will leave school equipped with a range of skills and knowledge to enable them to study Computing with confidence at Key stage 3. As technology continues to evolve, computing literacy becomes essential. Understanding how computers work and how to use them effectively prepares children for their future endeavours. We make links with our local secondary schools asking teachers to come in and provide Computing opportunities for our pupils.

Enrichment Opportunities:

Outside of the computing curriculum pupils have access to laptops and IPads which they can use across the curriculum. This allows pupils to see how the skills acquired during their computing lessons can be transferred to other lessons such as representing data in science or maths,

creating digital media for an advert they have written during English or filming a weather report in geography. The opportunities for computing across the curriculum are endless.

Lunch time clubs and after school clubs are offered on a rotation for children to improve touch typing skills using Nessy and for the development of coding skills through the Jam Coding company workshops.

Impact:

Formative assessment is an integral part of our approach to Teaching and Learning. Over the course of their study, we will use weekly cumulative formative diagnostic assessments (in class or for homework) to ensure that pupils are consistently retrieving their knowledge of different components. The purpose of this is to ensure all knowledge is retained (and any gaps are identified and addressed promptly) and to inform teachers' planning. Using this style of assessment, we will make use of the advantages of spaced practice as well as allowing pupils to be able to apply their knowledge to a wide variety of contexts.

At Primley Wood, teachers use assessment for learning within lessons to provide live feedback to allow pupils to deepen their understanding and identify gaps in knowledge and skills. Knowledge reviews are planned for spaced retrieval and allow for misconceptions to be addressed and further embed pupils understanding of key knowledge, skills and vocabulary. The progression of skills and knowledge allows teachers to assess the impact over the course of a unit, year and across phases. The scheme of learning is used to identify prior links and future learning which informs teacher assessment and allows building blocks of learning to further develop schemas within topics and across subjects.

Summative assessments are used to assess the impact of learning at the end of a unit. This can be in the form of a multiple choice quiz or a rubric which is used to identify strengths and areas for development, when pupils have completed a small project or piece of work that showcases several skills. Assessment data allows teachers to see where pupils are in their learning and to identify any gaps in coverage, knowledge, understanding and skills which then informs the curriculum and future teaching.