Beechwood Primary School

Statement of Intent for Computing

Summary Statement

At Beechwood, the Computing curriculum is rooted in the school's underlying aims, ethos and values. It is carefully designed to equip our pupils with the knowledge, skills, understanding, and attitudes that will prepare them for the next stage in their education and enable them to live successful lives in the future. This includes ensuring that pupils with Special Educational Needs and Disabilities (SEND) have equitable access to computing education through tailored support and inclusive practices.

Aims

The Beechwood Computing curriculum aims to teach:

- The fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation.
- The analysis of problems in computational terms, with repeated practical experience of writing computer programs in order to solve such problems.
- The evaluation and application of information technology, including new or unfamiliar technologies, analytically to solve problems.
- Responsibility, competence, confidence and creativity in the use of information and communication technology so that pupils are able to be active participants in the digital world.
- **Ensure all pupils, including those with SEND, can access and succeed in computing through adaptive technologies, differentiated tasks, and personalised support.**

Key Concepts and Ideas

Key concepts and ideas that are revisited throughout school are:

- Understand that digital technology is a powerful tool for communicating and presenting ideas and information for a range of purposes.
- Show understanding of the different aspects of computer science at an age appropriate level:
    - **Logic and algorithms:** the application of logical reasoning and algorithms to programming.
    - **Abstraction:** identifying general patterns and removing details.
    - **Data representation:** that data can be represented electronically in a variety of ways.
    - **Decomposition:** breaking down problems into smaller parts.
    - **Pattern recognition:** solving problems by finding similarities and common characteristics in smaller problems.

- The importance of the safe use of computers and the internet.

SEND in Computing

We are committed to making computing accessible for all learners. Strategies include:

- Use of assistive technologies such as speech-to-text, screen readers, and adapted keyboards.
- Differentiated tasks and scaffolding to meet individual needs.
- Visual aids, multi-sensory approaches, and practical activities to support abstract concepts.
- Additional adult support and small group interventions where appropriate.
- Alignment with the SEND Code of Practice and the school's Accessibility Plan.

Rationale for the Order of Teaching

EYFS – Children are taught to use technology through adult-led activities which lead into the continuous and enhanced areas of provision in the classroom. Pupils use Bee Bots to develop their fine motor skills, speaking and communication skills and concepts such as sharing and turn taking as well as mathematical ideas such as direction and counting. They use the large interactive board to develop fine and large motor skills, writing, art and design as well as mathematical games. The interactive board is also used alongside iPads to research and develop their Understanding of the World. Children have access to other technology such as sound pegs, metal detectors and UV lights which are used to support things such as their literacy, listening skills and other areas of the curriculum. Activities are adapted for pupils with SEND through simplified instructions, visual prompts, and additional adult support.

Year 1 – Children are taught to use technology such as computers, tablet computers and floor turtles and to recognise common uses of technology such as mobile phones and tablets beyond school. They are taught the beginnings of basic algorithms through floor turtles and onscreen representations of floor turtles where they begin with single commands and build up to a series of commands. They are taught to use a variety of software for drawing and entering text, and how to save and retrieve their work. They are taught to keep their passwords safe and to begin to use technology safely. Pupils with SEND receive extra support for understanding algorithms using physical floor turtles and visual representations.

Year 2 – Children continue to use computers, tablets and floor turtles and begin to put together a series of commands to create simple algorithms and programmes. They begin to programme using code blocks to build up simple algorithms and to identify problems in the coding so they can debug their programmes. Year 2 begin to use a wider range of programmes to create, store, organise and retrieve their content. They are taught to keep their personal information private and where to go for help. SEND pupils use simplified interfaces and receive targeted feedback and may work with a partner or an adult where available.

Year 3 – Children continue to create their own programmes (mainly using Purple Mash coding) to build a wider variety of programmes and are introduced to the idea of variables in their programming. They are encouraged to check their code and to debug where necessary. They use a variety of software to present and organise data in different ways and to begin to analyse data.

They use a wide range of devices including digital cameras to create their own content. They are taught how to use technology safely, to keep personal information safe and who to contact to report concerns. SEND pupils benefit from structured templates and step-by-step guides, as well as paired work or individualised outcomes.

Year 4 – Children use the programming language Logo to build upon what has been taught in KS1 and to produce patterns and pictures based on Ancient Greek art. They have to build the algorithms into an 'elegant' solution by decomposing the programme into smaller routines and building them into one algorithm. They are introduced to a wider variety of software including common programmes that are in wider use in school, business and home-life, such as Microsoft PowerPoint, Excel and MS Publisher to create, collect organise, analyse and present information and data. SEND pupils provided with scaffolded tasks and alternative input devices if needed.

Year 5 – Children continue to build on previous years' work and to use a variety of platforms for coding including Scratch and Code Bug. They begin to use various outputs including external devices such as Code Bugs and they design and write programmes with a specific outcome, debugging as they need to in their code. They use internet services such as email to contact overseas students with our link school, Mayo College, in India and to collaborate in a wider global context. Year 5 continue to use and combine a variety of widely used software programmes to create their own content and outcomes in a wider way, including audio recording to create podcasts. SEND learners are supported through collaborative projects and scaffolds and support frameworks and individualised outcomes.

Year 6 – Children use programming to create specific outcomes, games and quizzes, which include repetition, logic gates (if, then, else statements) and variables. For example; they create a scoring system for a quiz. They use a variety of devices such as digital cameras to create a range of outcomes which include videos and/or audio content. They use more advanced techniques in a range of software, such as non-linear presentations, using hyperlinks in PowerPoint presentations. SEND learners are supported through collaborative projects and scaffolds and support frameworks and individualised outcomes.

Assessment and Progress for SEND

Assessment considers individual starting points and uses alternative evidence such as oral explanations, practical demonstrations, and multimedia outputs. Progress is tracked against personalised targets.

Relevance to the School Curriculum Aims

A key role for research and enquiry Computing is used widely in the research of all curriculum subjects and for pupils to research their own interests, both in the computing lesson and in other curriculum subjects. Pupils are taught to critically use online sources of information, to choose appropriate search terms that will produce specific results, to be discerning and to evaluate the results they get.

An extended concept of curriculum provision Computing supports the school's international links where ICT is used to communicate and collaborate with our international link schools and partners

and also to share work and ideas through other collaborations, such as the British Council's eTwinning programmes.

An explicit development of pupils' creative skills Computing is used in creative aspects of the school curriculum to link to Art outcomes, such as Year 3 who produce digital art based on David Hockney's work, Technology and Design, where Year 6 used 3D CAD to create online ideas for their DT work and even simple music programmes such as Purple Mash's 2Sequence, which uses digital sampling.