



Barnfields Primary School: Computing Subject Rationale

Computing Subject Quest at Barnfields:

To develop a range of digital skills using a variety of computing technology safely and creatively.

Knowledge Types in Computing

Computer Science



Information technology



Digital literacy



Computing Intention

At Barnfields, Computing is a crucial part of the curriculum. We believe that the key skills children learn in Computing will allow them to access a world of technology safely and creatively. The importance of a high-quality Computing curriculum is becoming more evident as the demand and use of technology is underlying in many aspects of everyday life. We offer our children the opportunity to showcase their skills through a spiral curriculum building on three key areas from Early years through to Year 6. As they learn to navigate the ever-evolving digital world they will develop their skills in digital literacy, information technology and computer science.

The curriculum is designed to build upon skills year by year allowing children the opportunity to refine their computational thinking and explore a variety of computing devices and software programs safely. Internet safety is an integral part of the curriculum to ensure our children are taught how to be responsible and safe online.

Provision, Planning and Delivery

Provision

We bring our vision for Computing to life by:

- Dedicating weekly lesson time to Computing.
- implementing a spiral curriculum to allow children to build upon previous learning.
- Allowing children time to develop their skills across a range of key areas.
- Developing oracy skills in Computing through retrieval practice, learning conversations and discussions.
- Offering a range of computing devices for children to access to develop their skills in creating media, programming, data and information, computing systems and networks, and online safety.
- Personal log in details to access their own accounts when using the school computers in lessons and for extracurricular activities.
- Promoting independence when using technology through carefully modelled inputs and demonstrations.
- Dedicating lesson time to retrieval practice to ensure previous learning is retained and used to enhance the next phase of their learning.
- Encouraging positive reflections and peer feedback when working on technology projects.
- Promoting the use of technology in many areas of school life and making links to the wider world for children to understand its many uses.

Planning

Adhering to the Computing Subject Road Map, children at Barnfields access a carefully designed curriculum. Within this are areas of declarative knowledge (knowing that) and procedural knowledge (knowing how). These knowledge types are identified and sequenced to ensure children are taught important and meaningful skills with opportunities to practice them regularly.



At Barnfields, teachers access a computing scheme of work through Teach Computing. This scheme is funded by the DfE and follows the National Curriculum and to ensure units of work are covering the knowledge and skills recommended. This scheme is cyclical, focusing on increasing depth and building upon prior knowledge. The scheme covers 4 key areas of learning;



Computing
systems and
networks



Data and
Information



Programming



Creating media

These areas are taught in KS1 and KS2 to ensure the children revisit their previous learning and develop their skills each year. Online safety is woven into units within this scheme covered by different themes and concepts at multiple points throughout the year.

Delivery

The Computing units are delivered specifically from Year 1 to Year 6. The children are taught 6 units each year, one unit per half term. Some units are carefully sequenced to be taught in order to ensure children are making links to and build upon prior learning. Children also have a dedicated online safety lesson during each half term. At Barnfields children are taught one Computing lesson per week, however, extracurricular activities may involve the use of computing devices for other areas of the curriculum such as Reading and Maths.

Progression

At Barnfields, we ensure progression in Computing through a carefully designed and sequenced curriculum. Children build upon their prior learning with units showcasing their knowledge year by year. Within the three key strands of Computing there are areas covered in each unit as the year progresses. These areas are revisited frequently to allow children to use the same set of skills to progress into the next phase of their learning. Our goal is to provide children with the necessary skills to navigate the digital world safely and promote responsibility when using technology.



We ensure they engage with basic digital tools, learning to navigate devices and understand their purpose in everyday life. Through structured activities, children are introduced to simple concepts such as input, output, and basic coding, helping them to solve problems and express creativity using technology. These activities can also be unplugged to ensure concepts of learning are understood alongside practical elements being developed. As they progress through key stages, children develop their computational thinking skills, programming skills, use digital devices to create media, handle data and understand the importance of online safety and responsible use of technology. Our aim is that by the end of primary school, children are confident in using a variety of software and tools to create digital content, collaborate with others, and express their ideas effectively.

Our aim is to prepare students to be responsible digital citizens who can creatively use technology to solve real-world problems, engage with digital content, and continue learning in an evolving digital landscape.

Disciplinary Oracy

Oracy is an essential part of Computing at Barnfields, supporting children in developing the language, reasoning and clarity needed to think and communicate like computer scientists. Talk is used to help pupils articulate their thinking,



use technical vocabulary accurately and explain digital processes with precision. Children are taught how to verbalise steps in a sequence, justify decisions and collaborate effectively during practical tasks.

In EYFS, children begin to talk about technology in simple, meaningful ways. Through play and guided exploration, they name familiar devices, describe what technology can do and explain their actions using early computational language.

In Key Stage 1, pupils start to use talk more deliberately to explain algorithms, sequence instructions and predict outcomes. Teachers model 'thinking aloud' to demonstrate how to break problems into smaller steps and how to describe digital actions clearly. Structured routines such as paired explanation and guided questioning help children verbalise their reasoning before carrying out tasks on screen or with programmable devices.

By Key Stage 2, pupils are expected to use technical vocabulary independently and explain digital processes with increasing accuracy. Structured talk supports pupils in describing algorithms, narrating their problem-solving steps and evaluating the effectiveness of their solutions. Children discuss concepts such as variables, selection and repetition, using precise language to explain how and why their programs work.

Opportunities to present digital work—such as explaining a program, demonstrating a sequence or sharing a multimedia project—further develop clarity, confidence and audience awareness.

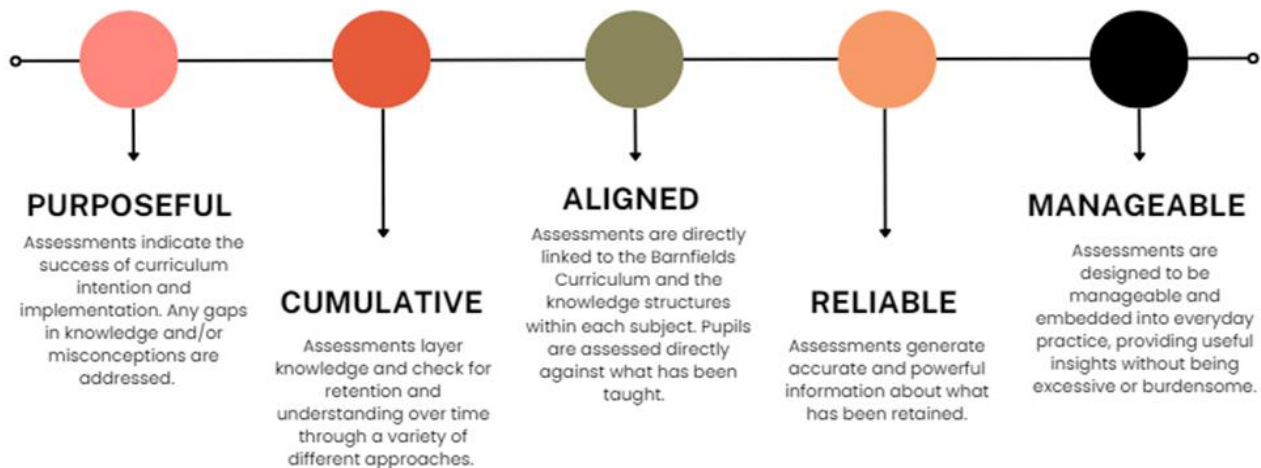
Assessment, Recording and Reporting

Assessment

Assessment in Computing follows the school's five assessment principles for the foundation subjects: *purposeful, cumulative, aligned, reliable and manageable*.



ASSESSMENT PRINCIPLES ACROSS THE FOUNDATION SUBJECTS AT BARNFIELDS



Throughout each unit, teachers assess pupils' understanding through the opportunities detailed in the lesson plans. Learning objectives are introduced at the beginning of each lesson and reviewed at the end, allowing teachers to check understanding and respond to pupils' needs as the unit progresses. Assessment is ongoing and may include



questioning, learning conversations, retrieval practice, observation of practical work, self and peer assessment, and reviewing completed outcomes.

At the end of each unit, pupils' attainment is assessed using the Teach Computing assessment framework. Each unit includes either a multiple-choice quiz or an assessment rubric, depending on the focus of the unit. Units with a greater emphasis on conceptual understanding use multiple-choice quizzes, while units that focus more on skills development or project work use rubrics to support teacher judgement. In programming units, the most appropriate assessment framework has been selected on a best-fit basis.

Recording

Computing is documented in the children's wider curriculum books. Work can be presented through unplugged activities or printouts of the children's work to document practical lessons. Teachers will assess the understanding of each lesson through the learning intention which is always stuck in the book on the retrieval sheet.

Reporting

Teachers upload pupil attainment data onto Sonar Tracker at the end of each term, determining if a child is either below age-related expectation, age-related expectation or exceeding age-related expectation. The aim of this assessment is to provide an evaluation of how much knowledge pupils have learned and remembered. Computing attainment is formally communicated with parents on the children's end of year reports.

Supporting Research:

[Research review series: computing - GOV.UK](#)