FULBOURN PRIMARY SCHOOL

Our Approach to...

Computing

Aims:

- To ensure all children develop the knowledge and skills to use digital technology confidently, creatively and purposefully.
- To develop a secure understanding of the three strands of computing: Computer Science, Information Technology and Digital Literacy.
- To teach children how computers and networks work, how to create and debug algorithms and programs, and how to use technology to create, organise and communicate information.
- To nurture curiosity, creativity, problem-solving and resilience, encouraging children to test ideas, learn from mistakes and improve their work.
- To ensure all children understand how to use technology safely, respectfully and responsibly, and know how to seek help when something online causes concern.
- To help children become discerning digital citizens who can consider the opportunities, limitations and risks of technology and its impact on themselves and others.
- To provide an ambitious, progressive curriculum that builds on prior learning and prepares children for the next stage of education and life in an increasingly digital world.

Research base:

- Ofsted Research Review Series 2022 https://www.gov.uk/government/publications/research-review-series-computing/research-review-series-computing
- National Centre for Computing Education. Teach Computing Curriculum. https://teachcomputing.org/curriculum
- UK Council for Internet Safety. Education for a Connected World framework. https://www.gov.uk/government/publications/education-for-a-connected-world
- Project Evolve. Education for a Connected World resources. https://projectevolve.co.uk/
- NASEN. Teachers' Handbook: SEND.

Procedures:

Teach Computing Curriculum – Since September 2024, we have followed the Teach Computing scheme developed by the National Centre for Computing Education (NCCE). The scheme is evidence-based and informed by research. Teachers use its carefully sequenced units and the 12 principles of computing pedagogy to support effective teaching and learning.

Curriculum structure – Computing is taught through three blocks of learning each year, each lasting a term: Computing Systems and Networks, Creating Media, and Programming. Within these blocks there are two half-termly units. Units are organised into a two-year cycle so that pupils experience a broad and balanced curriculum with progression across Years 1 to 6. Children in EYFS use materials from the 'Barefoot' scheme – an introduction to computational thinking.

Three strands – Across the curriculum, children learn Computer Science (including algorithms, programming and debugging), Information Technology (using digital systems to create, organise and manipulate content) and Digital Literacy (understanding how to use technology effectively and responsibly). These strands are connected throughout the units rather than taught in isolation.

Projects and purposeful outcomes – Learning often takes the form of practical projects in which children take on a role, create something or solve a problem. They may work as photographers and artists, data collectors, web designers or video-game programmers. Projects provide a meaningful context for applying knowledge and skills, while encouraging creativity, curiosity and problem-solving.

Computing booklets – Children complete a computing booklet for each unit of work. Booklets provide a structured record of learning and include retrieval activities to revisit prior knowledge and vocabulary. They help pupils record key learning, reflect on what they have learned and build connections between lessons and units.

Online safety – Online safety is taught within Computing so that pupils learn to use technology safely, respectfully and responsibly. Teaching helps children recognise potential risks, protect personal information, make thoughtful choices and know how to report concerns or seek support. Online safety is revisited throughout the curriculum and is not confined to a single unit or annual event.

Know Yourself Grow Yourself and Project Evolve – Additional online safety teaching is delivered through Fulbourn Primary School's Know Yourself Grow Yourself PSHE curriculum, using lessons from Project Evolve. This complements the Computing curriculum and provides further opportunities to discuss online relationships, wellbeing, privacy, reputation, managing content and contact, and how to respond to concerns in age-appropriate ways.

Vocabulary – Subject-specific vocabulary is explicitly introduced, modelled and revisited. Teachers support children to use computing terminology accurately when explaining processes, discussing digital systems, planning programs and evaluating their work. Key vocabulary and visual prompts are used to support understanding and recall.

Retrieval and assessment – Teachers revisit prior learning through short retrieval activities, questioning, discussion and tasks that require pupils to apply previously taught knowledge. The unit booklets provide a record of learning and a further opportunity to identify what pupils remember and where misconceptions may need to be addressed. Practical work, pupil explanations and completed outcomes also inform assessment.

Resources – The school has three laptop trolleys, one for each phase, with 20 laptops in each trolley, and one iPad trolley containing 25 iPads. These resources support regular access to digital devices for practical computing lessons and for pupils to apply their skills across the curriculum.

Reading:

- Reading and interpreting instructions, prompts and information presented on screen.
- Reading and using subject-specific vocabulary accurately.
- Reading, following and debugging algorithms and program instructions.
- Evaluating digital content critically, including considering reliability, purpose and audience.
- Reading age-appropriate online safety scenarios and discussing safe, respectful responses.

Inclusion by design:

- Explicit modelling – Teachers model processes step by step, verbalising decisions and making abstract concepts visible. Worked examples and demonstrations support pupils to understand new tools and techniques.
- Scaffolding and visuals – Instructions are broken into manageable steps and supported with visual prompts, vocabulary banks, screenshots or examples where helpful. Tasks and resources can be adapted to reduce unnecessary language and cognitive load.
- Multiple ways to demonstrate learning – Pupils can show understanding through practical outcomes, verbal explanations, diagrams, debugging and written responses in their computing booklets. Support is adjusted so that all pupils can participate in ambitious learning.

- Practice and retrieval – Frequent opportunities to practise, revisit vocabulary and retrieve prior learning help pupils build confidence and retain key knowledge. Misconceptions are addressed promptly, and pupils are encouraged to test, debug and improve their work.
- Safe and supported use – Online safety discussions are age-appropriate and carefully supported. Children are reminded of trusted adults and the routes available to them if they encounter something worrying or inappropriate online.

Glossary:

Algorithm: A sequence of clear instructions or steps used to complete a task or solve a problem.

Computer Science: The study of how computers work and how instructions, algorithms and programs can be used to solve problems.

Debugging: Finding and correcting errors in an algorithm or program.

Digital Literacy: The knowledge and skills needed to use digital technology effectively, safely and responsibly.

Information Technology: Using digital systems and tools to create, store, organise, process and communicate information.

Online Safety: Understanding how to use online technologies safely and responsibly, recognise risks and know how to get help.

Programming: Creating instructions that a computer can follow to carry out a task.

Retrieval practice: Activities that help pupils recall and revisit knowledge they have previously learned.