

Our Computing Curriculum Sequence

Our computing Curriculum starts with the expectations of the National Curriculum set out below in the aims and subject content.

Computing National Curriculum

Aims

The national curriculum for computing aims to ensure that all pupils:

1. can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation
2. can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems
3. can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems
4. are responsible, competent, confident and creative users of information and communication technology.

Computing Subject content

Key stage 1 (Years 1&2)

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- 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.

Key stage 2 (Years 3-6)

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- 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
- 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
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- 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.

Our Computing Curriculum

Through our curriculum our children acquire and build knowledge and skills in three strands of computing:

1. **Computer Science: (Theory and Programming)** This deals with the learning statements developing understanding and application of programming and coding.
2. **Digital Literacy:** This deals with the learning statements developing understanding and application of online communication and safety
3. **Information Technology:** This deals with the learning statements developing understanding and application of using technology purposefully to create, store, organise, manipulate and retrieve digital content.

In each strand pupils are incrementally taught the concepts and language to develop their knowledge of computing, whilst being provided opportunities to develop their skills through increasingly complex or mature activities across the Key Stages.

	Early Years Framework		
	Computer Science	Digital Literacy	Information Technology
Early Years	The distinct section on Technology has been removed from the new Early Years framework on the understanding that children now have very high levels of access to ICT such as phones and tablets. ICT is understood as a way that children may record and develop their play and thinking switching fluidly between first hand and on-screen experiences In EY children are provide ICT opportunities to support the 2020 development matters guidance and work closely with parents to understand the ICT opportunities children have at home. Opportunities will support and enhance Development Matters guidance such as; 'Fine Motor Skills - Begin to show accuracy and care when drawing' - Children may move fluidly between using traditional pencil and digital tools to draw and make marks.		
	National Curriculum		
	Computer Science	Digital Literacy	Information Technology
Key Stage 1	Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions Create and debug simple programs Use logical reasoning to predict the behaviour of simple programs	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.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content
Key Stage 2	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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	Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. 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 Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content	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

Computing Long Term Plan

Cycle A – 2020/2021 Cycle B – 2021/2022

	Annual Cycle A	Annual Cycle B	Annual Cycle A	Annual Cycle B	Annual Cycle A	Annual Cycle B
	Years 1&2	Years 1&2	Years 3&4	Years 3&4	Years 5&6	Years 5&6
Autumn	Digital Literacy E Safety Staying Safe Online (DB)	Computer Science: Programming and Control Movement DB P1/2 Drawing DB P1/2 Online Safety: Self image and identity from Project Evolve	Digital Literacy: E-Safety and Online Communication Online safety (DB) - E-safety - Online Respect - Online Friendships Cyberbullying	Computer Science: Algorithms DB - P3: Advanced Code Blocks (23) P3: Control (5)	Digital Literacy:online safety Online safety resources on DB Staying healthy online DB unit. NCEE – networks unit (y4)	Online Safety : Online Relationships from Project Evolve Computer Science: Variables and sequencing P5 Piano keyboard (17) P6: Piano toolbox (1) P6: Advanced code blocks (8)
Spring	Digital Literacy: technology beyond school Jobs in Computing DB Computing Systems and networks IT around us (NCEE) Typing Skills (BBC Dance Mat)	Computer Science: Programming and Control Problem Solving DB Debugging DB P1/2 Online Safety: from Project Evolve	Information Technology: Using Powerpoint to present data Using Microsoft Powerpoint and age-appropriate internet search engines (e.g. Kiddle) (teacher planning)	Computer Science: Sequencing & Repetition DB - P3: Properties & Sequences (8) P4: Advanced Properties (5) P3: Pattern & Repetition (5) P4: Advanced Repetition (9)	Information Technology: Develop & Apply PowerPoint Using PowerPoint – building on Y3/4	Online Safety: Online Bullying from Project Evolve Computer Science: inputs and outputs P5 Race track (13) P6: Advanced race track (10)
Summer	Information Technology: Typing Skills (BBC Dance Mat) DB Platform – producing, organising, saving, retrieving work. Online Safety: Online Bullying from Project Evolve	Computer Science: Programming and Control Code Blocks Unit 11 P2	Information Technology: Word processing and formatting Using Microsoft Word (teacher planning)	Computer Science: Inputs & Outputs DB - P4: Coding Conversation (10) P4: Music Mania (9)	Information Technology: HTML Styling – creating webpages using communities on DB DB Primary Unit 33 Information tech	Online Safety : Health, well-being and lifestyle from ProjectEvolve Computer Science: Designing programs & problem solving P5: Quizzes (8) P6: Quiz toolbox (1) P6: Sky at night (11)

Principles

- Online Safety is also taught in PSHCE units and on an ongoing basis in respond to any emerging or developing arising issues e.g. responding to a new form of social media being used by children.
- Flexible to achieve progression in mixed aged classes
- General core concepts and skills that can be applied in new and emerging contexts e.g. new software and hardware
- Ability to adapt and evolve and use cross curricular (in particular digital literacy and information tech
- Ensuring computer science units are effectively taught and appropriately proportionate part of curriculum recognising major role of computer science in modern world
- Use of DB to ensure consistency in quality and to support staff in delivering high quality within capacity of hardware and software knowledge and skills more important than which software as this will change and evolve
- Introduce use of 'real life software'

Quality First Curriculum Implementation - Key Resources

Our quality first curriculum implementation of our computing curriculum is supported by the following two high quality resources to ensure consistency and accessibility for all children.

[DB Primary](#) – Online learning platform used for delivery of some computing curriculum sequences of learning and also as our remote education learning platform.

[Project Evolve](#) – Online Safety resources using UKCIS framework to provide relevant resources for all areas of internet safety.

[Teach Computing](#) – National Centre for Computing Education resource units for Ks1&2

