

Computing National Curriculum

Aims:

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

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

Key stage 1

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

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.

Computing Long Term Plan

	Computing		ICT Opportunities	e-Safety
Y1	Espresso Coding	Bee-Bot and Bee-Bot for iPad Kodable for iPad Daisy the Dinosaur	Still animation Word processing Graphing Photographs Video editing News reporting Film-making Spreadsheets Databases Podcasting Desktop publishing Comic books Google maps Internet research Padlet collaborative writing Blogging Art and design packages Data logging Garageband Geocaching Skype calling – hotseating Website editing Powerpoint Presentations Weather reporting	Children must be taught when using ICT the five principles of e-safety: <ul style="list-style-type: none"> • obsessive use • copyright • exposure to inappropriate materials • physical danger / sexual abuse • inappropriate behaviour These factors should be taught at all times through ICT.
Y2		Light-bot 2DIY Daisy the Dinosaur A.L.E.X for iPad		
Y3		Sploader! Sketch Nation for iPad 2DIY		
Y4		Kodu Hopscotch for iPad		
Y5		Scratch Hopscotch for iPad HTML		
Y6		Scratch HTML Construct 2		

There must be opportunities for children to apply the skills from the national curriculum in every lesson.