

Computing Key Stage 2

Purpose of study

A high-quality computing education equips pupils to use computational thinking and creativity to understand and change the world. Computing has deep links with mathematics, science, and design and technology, and provides insights into both natural and artificial systems. The core of computing is computer science, in which pupils are taught the principles of information and computation, how digital systems work, and how to put this knowledge to use through programming. Building on this knowledge and understanding, pupils are equipped to use information technology to create programs, systems and a range of content. Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world.

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.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. *Items in italics are suggestions only*

Key stage 2

Pupils should be taught to:	Year 3			Year 4			Year 5			Year 6		
	Aut	Spr	Sum	Aut	Spr	Sum	Aut	Spr	Sum	Aut	Spr	Sum
design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts <i>by</i> : <ul style="list-style-type: none"> • <i>using repetition and sequencing</i> • <i>using conditional statements</i> • <i>designing and creating a game</i> 												
use sequence, selection and repetition in programs; work with variables and various forms of input and output <i>by</i> : <ul style="list-style-type: none"> • <i>using variables and lists</i> • <i>using different forms of input/output</i> • <i>using the broadcast function</i> • <i>using a range of online coding programs</i> 												
use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs <i>by</i> : <ul style="list-style-type: none"> • <i>using computer science skills for logical thinking</i> • <i>understanding and using a range of computer science concepts</i> 												
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 <i>by</i> : <ul style="list-style-type: none"> • <i>contributing to a class blog</i> • <i>reading and creating a blog</i> • <i>explaining how computer systems work</i> • <i>listening to and creating podcasts</i> • <i>communicating online</i> 												
use search technologies effectively, appreciate how results are selected and ranked and be discerning in evaluating digital content <i>by</i> : <ul style="list-style-type: none"> • <i>explaining and showing how to use the internet efficiently</i> • <i>understanding and explaining copyright</i> 												

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<p>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 by:</p> <ul style="list-style-type: none"> • <i>using technology to create art/D&T for a purpose</i> • <i>presenting information in a data table</i> • <i>creating a digital world/characters</i> • <i>creating and using databases</i> • <i>creating a stop-motion animation</i> • <i>creating and using spreadsheets</i> • <i>creating an information film</i> • <i>creating a music video</i> 																				
<p>use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact by:</p> <ul style="list-style-type: none"> • <i>learning how to use the internet responsibly</i> • <i>communicating safely and responsibly online</i> 																				