



COMPUTING SUBJECT COVERAGE

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.

Subject content

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.

Computing Subject Coverage			
	P1-3	P4-6	P7-8
<p>1. Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.</p> <p>2. Create and debug simple programs.</p> <p>3. Use logical reasoning to predict the behaviour of simple programs.</p>	<p>Experience controlling a device or program using cause and effect e.g. in simple switch activities.</p> <p>Predict and anticipate the outcome of simple cause and effect activities.</p>	<p>Experience simple algorithms to control a person or device. E.g. coactively sequencing instruction cards for an adult to make a sandwich.</p>	<p>Create simple algorithms to control a person or device. E.g. using scratch or beebots.</p> <p>Begin to understand that algorithms are instructions that a computer follows to give a desired result.</p> <p>Predict the outcome of a simple algorithm.</p>
<p>4. Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</p> <p>5. Recognise common uses of information technology beyond school.</p>	<p>Experience technological programs, devices, toys and resources.</p> <p>Opportunities to explore things with interest and press parts/switches/touch screen/break sound beam to create an effect.</p>	<p>Intentionally use technology in order to produce a predictable result.</p> <p>Understand that information can be stored and retrieved</p> <p>Use control devices to select and manipulate images on screen.</p> <p>They respond to simple instructions to control a device.</p>	<p>Use technology to communicate/present their ideas.</p> <p>Select appropriate device/software for a task.</p> <p>Find similar information in different formats, (photo in paper, in book, on website, from TV programme)</p> <p>communicate about their use of ICT</p>
<p>6. 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.</p>	<p>Link with PHSE – ‘Safety’</p>		
	<p>Online safety/Cyberbullying</p> <p>Be aware of appropriate behaviours,</p> <p>Know not to give out personal information to strangers,</p> <p>Know who to ask for help if worried.</p>		



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