

The National Curriculum and the Centre for Computing History

Ways in which a visit to CCH supports the aims of specific NC subjects
at the Key Stages 1-2

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KS 1 and 2 : Computing

KS 1 and 2 references	Supported by visit to CCH through:
<p>KS1</p> <ul style="list-style-type: none"> ● 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 <p>KS2</p> <ul style="list-style-type: none"> ● 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 	<p>Workshop choice Eg coding a Raspberry, MicroBit or Acorn BBC computer</p> <p>Megaprocessor: observe the flow of instructions passing through the processor</p>
<p>KS1</p> <ul style="list-style-type: none"> ● use technology purposefully to create, organise, store, manipulate and retrieve digital content ● recognise common uses of information technology beyond school <p>KS2</p> <ul style="list-style-type: none"> ● 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 	<p>Main gallery timeline and evidence of the wide variety of uses computer related hardware and software has been put to in order to solve real world problems.</p> <p>Megaprocessor zone: computer processors can be in many everyday devices.</p> <p>Games zone: digital 'entertainment' as a use for technology.</p>

<p>goals, including collecting, analysing, evaluating and presenting data and information</p>	
<p>KS1</p> <ul style="list-style-type: none"> • use technology safely and respectfully, keeping personal information private; <p>KS2</p> <ul style="list-style-type: none"> • use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; 	<p>Main gallery timeline and evidence of the emergence of concerns and then systems to ensure privacy, security and error checking</p> <p>Games zone: limiting use to avoid personal obsession</p>
<p>KS 2</p> <ul style="list-style-type: none"> • 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 	<p>(June 2017)</p> <p>Connected World display in main gallery</p>

KS 1 and 2 : Science

KS 1 and 2 references	Supported by visit to CCH through:
<p>KS2: Year 3 programme of study Light: Pupils should explore what happens when light reflects off a mirror or other reflective surfaces, including playing mirror games to help them to answer questions about how light behaves.</p>	<p>(June 2017) Connected World display in main gallery Optic fibres a way to use light to communicate</p> <p>Main gallery exhibits Use of light as a means to store data: CDs, Laser Discs</p>
<p>KS2: Year 3 programme of study Forces and magnets: ... identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.</p>	<p>Main gallery exhibits Use of properties of magnetism to 'write' data onto tape and discs</p>
<p>KS2: Year 4 programme of study Sound: ... find patterns between the pitch of a sound and features of the object that produced it</p>	<p>Main gallery exhibits Use of sound as a way that machines can 'talk' to each other Eg play cassette containing stored program data</p>
<p>KS2: Year 4 programme of study Electricity: identify common appliances that run on electricity</p> <p>Pupils should construct simple series circuits, trying different components, for example, bulbs, buzzers and motors, and including switches, and use their circuits to create simple devices.</p>	<p>Main gallery: all computers run on electricity Fundamental circuitry is based on flow of electricity and switches</p> <p>Workshop: use of electricity to connect devices to control LEDs etc</p>

<p>KS2: Year 5 programme of study Properties and changes of materials: conductivity (electrical and thermal), and response to magnets. They might compare materials in order to make a switch in a circuit.</p>	<p>Workshop: use of Makey Makey and conductivity</p>
<p>KS2: Year 6 programme of study Light: recognise that light appears to travel in straight lines</p>	<p>(June 2017) Connected World display in main gallery Optic fibres a way to use light to communicate</p> <p>Main gallery exhibits Use of light as a means to store data: CDs, Laser Discs</p>
<p>KS2: Year 6 programme of study Electricity: compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches</p>	<p>Workshop: use of electricity to connect devices to control LEDS etc</p>

KS 1 and 2 : Maths

KS 1 and 2 references	Supported by visit to CCH through:
<p>KS2: Year 5 programme of study Number – number and place value read, write, order and compare numbers to at least 1 000 000 and determine the value of each digit</p> <p>KS2: Year 6 programme of study Number – number and place value read, write, order and compare numbers up to 10 000 000 and determine the value of each digit</p>	<p>Main gallery: helping students comprehend larger numbers in computer storage; Kb, Mb, Gb, Tb and relationship between them.</p>
<p>KS2: Year 6 programme of study Algebra use simple formulae</p>	<p>Workshop: programming using variables</p>

KS 1 and 2 : Design Technology

KS 1 and 2 references	Supported by visit to CCH through:
<p>KS1: Evaluate</p> <ul style="list-style-type: none"> ● explore and evaluate a range of existing products <p>KS2: Evaluate</p> <ul style="list-style-type: none"> ● investigate and analyse a range of existing products ● evaluate their ideas and products against their own design criteria and consider the views of others to improve their work ● understand how key events and individuals in design and technology have helped shape the world 	<p>Main gallery: students exploring the development of computing as consumer products, the markets they reach, limitations and opportunities.</p> <p>Signposting key events and individuals that have contributed to development of computer related technologies.</p>
<p>KS2: Technical knowledge</p> <ul style="list-style-type: none"> ● understand and use electrical systems in their products [for example, series circuits incorporating switches, bulbs, buzzers and motors] ● apply their understanding of computing to program, monitor and control their products 	<p>Workshop: Those requiring some circuit connections to devices</p> <p>Programming workshops controlling devices</p>

KS 1 and 2 : History

KS 1 and 2 references	Supported by visit to CCH through:
<p>KS1 and continuing into KS2</p> <ul style="list-style-type: none">• changes within living memory – where appropriate, these should be used to reveal aspects of change in national life• events beyond living memory that are significant nationally or globally [for example, the Great Fire of London, the first aeroplane flight or events commemorated through festivals or anniversaries]• the lives of significant individuals in the past who have contributed to national and international achievements, some should be used to compare aspects of life in different periods [for example, Elizabeth I and Queen Victoria, Christopher Columbus and Neil Armstrong, William Caxton and Tim Berners-Lee, Pieter Bruegel the Elder and LS Lowry, Rosa Parks and Emily Davison, Mary Seacole and/or Florence Nightingale and Edith Cavell]• significant historical events, people and places in their own locality	<p>Main gallery: Much of computing history is recent Anniversaries Significant individuals Local interest - developments in Cambridge.</p>