



Curriculum Coverage for Computing

Sunnyhill Primary School



This is the Computing knowledge that the children should cover over their time with us, building on their skills each year.

It has been split into three strands, following the [CAS Guide](#).

Digital Literacy

This is understanding how we use technology, including the internet, to communicate and find information. It includes internet safety and deciding which online sources to trust.

Information Technology

This is using a computer for things like word processing, spreadsheets, presentations, email, internet searches and so on. It is the 'everyday' computing we all do.

Computer Science

This is what we might think of as 'coding' or 'programming', as well as understanding how computers use logic and algorithms. It can include unplugged activities to teach the same skills.

Internet Safety (in the **Digital Literacy** column) is essential and should be taught during Circle Time as well as Computing lessons. It should also be brought up whenever appropriate, e.g. when using computers for other subjects, when talking about bullying, when taking photographs and when the teacher is modelling using the internet.

Most of the skills in the **Information Technology** column, and many of those in the **Computer Science** column, can be taught cross-curricularly.

For example:

- **Maths:** explaining the steps to solve a problem or looking at an incorrect calculation and 'debugging' it. Creating tables and graphs in Excel. Using formulae. Using calculators and understanding that the computer can only work with the information you give it.
- **English:** ordering events in a story. Writing instructions. Word processing work.
- **Science:** recording data on Excel or presenting findings with PowerPoint. Describing the steps in an experiment.
- **CLJ:** research topics and judging which sources to trust. Present group work using PowerPoint. Ordering historical events.
- **DT:** designing and creating products using coding. Thinking about the user and what problem the computer needs to solve for them. Describing the steps used and solving problems.

Something which might be useful to use while you're waiting for everyone to log on is TypingClub [<https://www.typingclub.com/sportal/program-3/117.play>] which can keep them busy and help typing skills! [tiny.cc/suntype] is a short link to use which will be easier for the kids to type. It also has several language options to choose.

EYFS Development Matters

Communication and Language: Speaking

- Uses talk to organise, sequence and clarify thinking, ideas, feelings and events.

Physical Development: Health and Self Care

- Practices some appropriate safety measures without direct supervision.

Literacy: Reading

- Knows that information can be retrieved from books and computers.
- Links sounds to letters, naming and sounding the letters of the alphabet.

Mathematics: Numbers

- Recognises numerals 1 to 5.

Mathematics: Shape, Space and Measure

- Orders and sequences familiar events

Understanding the World: The World

- Talks about why things happen and how things work.
- Looks closely at similarities, differences, patterns and change

Understanding the world: Technology

- Knows how to operate simple equipment, e.g. turns on CD player and uses remote control.
- Shows an interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones.
- Shows skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images.
- Knows that information can be retrieved from computers.
- Completes a simple program on a computer.
- Uses ICT hardware to interact with age-appropriate computer software.

	Digital Literacy	Information Technology	Computer Science
Nursery & Reception	<p>Understand some uses of digital devices.</p> <p>Understand how to turn devices they use regularly on and off, and that devices need to be powered to work.</p>	<p>Handle digital devices appropriately most of the time.</p> <p>Use digital devices to take photographs, asking permission from the subject. Know what to say and do if they do not want their picture taken.</p> <p>Find letters and numbers on keyboards on-screen and/or physical keyboard.</p>	<p>Understand instruction words e.g. first, next, then, finally, if.</p> <p>Using Code-a-pillar, LearnPads, Bee-Bots and cameras where appropriate.</p>

National Curriculum: 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

	Digital Literacy	Information Technology	Computer Science
Year 1	<p>As a class, create Internet Safety rules.</p> <p>Know the pupil username and password for school computers.</p> <p>Know that they should not share passwords with others. Understand what information about them is private.</p> <p>Understand what 'the internet' is, and some ways that it is used. Know some devices which can access the internet.</p>	<p>Handle digital devices appropriately almost all the time.</p> <p>With adult support, use the internet to answer simple questions and observe adults modelling (e.g. on IWB) how to search and find information online.</p> <p>Understand that many devices can be used to take photos and use digital cameras to take photos. Select and delete photos they have taken.</p> <p>Get permission to take photographs of other people and delete photographs if the person asks them to (or ask an adult to do it).</p> <p>Know that some screens are touch-screen and some are not.</p> <p>Be able to choose programs or apps on a familiar device.</p>	<p>Sequence parts of a story, or instructions. Understand moving from one step to the next and what would go wrong if a step is skipped.</p> <p>Understand that computers need to follow instructions to work.</p> <p>Continue to use Bee-Bots. Decide what instructions to give the Bee-Bot and solve simple problems by programming them. For example, moving the Bot around an obstacle or along a path.</p>
Year 2	<p>As a class, create Internet Safety rules.</p> <p>Understand the difference between 'private information' (such as address, age, school) and 'secrets', what are good secrets to keep, what are not.</p>	<p>Use the internet to answer simple questions and observe the teacher modelling (e.g. on IWB) how to search and find information online. Make decisions about which search results to use.</p>	<p>Be able to explain how to solve a problem in maths or science, with steps.</p> <p>Use unplugged activities to understand algorithms, debugging etc. Including use of the correct terms.</p>

	<p>Know that they can ask other people not to share information about them (including photographs) online, and that they should respect the requests of others.</p> <p>Understand that people post information on the internet, and that the information can be shared. Think about the consequences of sharing such information.</p>		<p>Use Code.org [https://studio.code.org/s/pre-express-2018] to explore building and debugging simple programs. [tiny.cc/suncode] is a short URL for the children to type.</p>
<p>National Curriculum: Key stage 2 Pupils should be taught to:</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 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 			
	Digital Literacy	Information Technology	Computer Science
Year 3	<p>As a class, create Internet Safety rules.</p> <p>Understand that anything posted on the internet can be shared and may never be completely deleted. Know that they should not share personal information online, even if the person is an online 'friend'.</p> <p>Know that they can ask other people not to share information about them (including photographs) online, and that they should</p>	<p>Use the internet to research topics for CLJ, experimenting with different search terms to get the best results.</p> <p>Assess the results they find and try to choose the most reliable.</p> <p>Understand that not everything posted online is true, that they need to evaluate it themselves.</p>	<p>Use Code.org [https://studio.code.org/s/express-2018] to write and debug simple codes, including unplugged activities. [tiny.cc/suncode] is a short link which is easier for the children to type in.</p>

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<p>Year 4</p>	<p>respect the requests of others.</p> <p>Know the term 'cyberbullying' and what actions are cyberbullying. Understand that being unkind to someone online is the same as being unkind in 'real life'.</p> <p>Know what a social network is, and that there are age limits for them. Understand that not everyone online is who they say they are.</p> <p>Know what to do if something online worries them or they think they have shared information they shouldn't have.</p>	<p>Use Word, Publisher, PowerPoint or similar to create documents or presentations.</p> <p>Use Excel to create simple tables of information.</p>	<p>Use Scratch to write and debug simple codes.</p> <p>Use RaspberryPi computers to practice programming. Write, simplify and debug code. Be able to explain what they did and why it worked.</p>
<p>Year 5</p>	<p>As a class, create Internet Safety rules.</p> <p>Understand why people use social networks, and what things are not responsible uses of them.</p> <p>Know that they can ask other people not to share information about them (including photographs) online, and that they should respect the requests of others.</p> <p>Understand that they should respect age limits on games, websites and social networks.</p> <p>Know that cyberbullying has serious (real-life) consequences. Know what to do if they know about this happening or are a victim of it.</p> <p>Know what to do if something online worries them or they think they have shared information they shouldn't have.</p>	<p>Understand that different search engines may show different results.</p> <p>Use Word, Publisher, PowerPoint or similar to create documents or presentations.</p> <p>Use formulas in Excel to make calculations.</p>	<p>Use Crumble computers to program sequences of lights or movement. Write, simplify and debug code. Be able to explain what they did and why it worked.</p>

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<p>Year 6</p>	<p>As a class, create Internet Safety rules.</p> <p>Continue to discuss and understand cyberbullying, and what to do if they know about this happening or are a victim of it.</p> <p>Understand that they should always respect requests not to share information or photographs of others.</p> <p>Understand that some things online are not suitable for children and that they should respect age limits on games, websites and social networks.</p> <p>Be aware of how they might be persuaded to share personal information or meet people.</p> <p>Know what to do if something online worries them or they think they have shared information they shouldn't have.</p> <p>Know that social networks have ways to report suspicious, unpleasant or bullying behaviour.</p> <p>"Fake News" Understand that not all information online is true. Consider what reasons people might have for posting content which isn't true, and how they try to look convincing. Know how to find out whether something is true or not. Know not to share information unless you have checked it is true.</p>	<p>Use Word, Publisher, PowerPoint or similar to create documents or presentations.</p> <p>Use Excel to make calculations and graphs.</p>	<p>Design apps, thinking using <i>User Centred Design</i> (see resources at https://designclub.org.uk/).</p> <p>Use Espresso Coding to design and share apps. Write, simplify and debug code. Be able to explain what they did and why it worked.</p>
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