

# Year 6 - Computing



Unit	Learning outcomes	Computing programme of study	Software	Hardware
<b>6.1</b> <b>We are toy makers</b> Coding and physical computing	Pupils learn: <ul style="list-style-type: none"> <li>● how computers use stored programs to connect input to output</li> <li>● how to generate and evaluate designs in response to a brief</li> <li>● to plan a complex project by decomposing it into smaller parts</li> <li>● to work with physical components of a system</li> <li>● how to design and write a program for an embedded system</li> <li>● to use criteria to provide others with feedback on their work.</li> </ul>	<ul style="list-style-type: none"> <li>● Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems.</li> <li>● Use sequence, selection, and repetition in programs; work with various forms of input and output.</li> <li>● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>● MakeCode</li> </ul> <b>Alternative:</b> <ul style="list-style-type: none"> <li>● Scratch</li> </ul>	<ul style="list-style-type: none"> <li>● Laptop/desktop/ Chromebook computers or tablets</li> <li>● micro:bits</li> </ul>
<b>6.2</b> <b>We are computational thinkers</b> Mastering algorithms for searching, sorting and maths	Pupils learn to: <ul style="list-style-type: none"> <li>● develop the ability to reason logically about algorithms</li> <li>● understand how some key algorithms can be expressed as programs</li> <li>● understand that some algorithms are more efficient than others for the same problem</li> <li>● understand common algorithms for searching and sorting a list.</li> </ul>	<ul style="list-style-type: none"> <li>● Design, write and debug programs that accomplish specific goals.</li> <li>● Use sequence, selection and repetition in programs; work with variables and various forms of input and output.</li> <li>● Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>● Google Maps</li> <li>● Scratch</li> </ul> <b>Alternative:</b> <ul style="list-style-type: none"> <li>● Snap!</li> </ul>	<ul style="list-style-type: none"> <li>● Laptop/desktop/ Chromebook computers or iPads</li> </ul>
<b>6.3</b> <b>We are publishers</b> Creating a yearbook or magazine	Pupils learn to: <ul style="list-style-type: none"> <li>● manage or contribute to large collaborative projects, facilitated using online tools</li> <li>● write and review content</li> <li>● source digital media while demonstrating safe, respectful and responsible use</li> <li>● design and produce a high-quality print document.</li> </ul>	<ul style="list-style-type: none"> <li>● Understand computer networks including the Internet and the opportunities they offer for communication and collaboration.</li> <li>● Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>● 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.</li> <li>● Use technology safely, respectfully and responsibly.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>● Google Docs</li> <li>● Microsoft Publisher</li> </ul> <b>Alternatives:</b> <ul style="list-style-type: none"> <li>● Book Creator</li> <li>● Microsoft Word</li> </ul>	<ul style="list-style-type: none"> <li>● Laptop/desktop/ Chromebook computers</li> <li>● Digital cameras</li> <li>● iPads</li> </ul>

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<b>6.4</b> <b>We are connected</b> Developing skills for social media	Pupils learn: <ul style="list-style-type: none"> <li>about appropriate rules or guidelines for a civil online discussion</li> <li>how search results are selected and ranked</li> <li>how to argue their point effectively, supporting their views with sources</li> <li>how to counter someone else's argument while showing respect and tolerance</li> <li>how to judge the reliability of an online source</li> <li>some strategies for dealing with online bullying.</li> </ul>	<ul style="list-style-type: none"> <li>Understand the opportunities computer networks offer for communication and collaboration.</li> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content.</li> </ul>	<ul style="list-style-type: none"> <li>School blogging platform (such as WordPress)</li> <li>Padlet</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop/ Chromebook computers or iPads</li> </ul>
<b>6.5</b> <b>We are advertisers</b> Creating a short television advert	Pupils learn to: <ul style="list-style-type: none"> <li>think critically about how video is used to promote a cause</li> <li>storyboard an effective advert for a cause</li> <li>work collaboratively to shoot original footage and source additional content</li> <li>acknowledge intellectual property rights</li> <li>work collaboratively to edit the assembled content to make an effective advert.</li> </ul>	<ul style="list-style-type: none"> <li>Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.</li> <li>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.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.</li> </ul>	Main: <ul style="list-style-type: none"> <li>iMovie</li> </ul> Alternatives: <ul style="list-style-type: none"> <li>Microsoft Photos</li> <li>WeVideo</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop/ Chromebook computers</li> <li>Digital cameras/ tablets</li> </ul>
<b>6.6</b> <b>We are AI developers</b> Learning about artificial intelligence and machine learning	Pupils learn: <ul style="list-style-type: none"> <li>how decision trees can be trained automatically to classify data</li> <li>how speech recognition works</li> <li>how a neural net recognises images</li> <li>to train a neural net to classify images</li> <li>to train a machine learning system to identify sentiments</li> <li>to consider some ethical principles in designing AI systems.</li> </ul>	<ul style="list-style-type: none"> <li>Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.</li> <li>Use and combine a variety of software 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.</li> </ul>	<ul style="list-style-type: none"> <li>Scratch (Machine Learning for Kids version)</li> <li>Audacity</li> <li>Google Chrome</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop/ Chromebook computers</li> <li>iPads</li> <li>Smart speaker (Google Home/ Amazon Echo) optional</li> </ul>