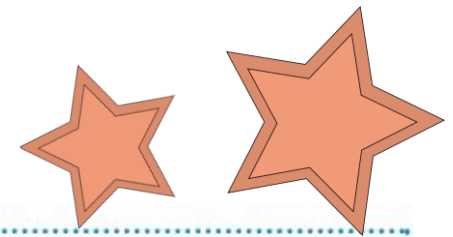


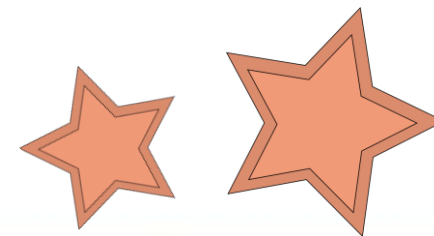
# Year 4 - Computing



## Overview of units

Unit	Learning outcomes	Computing programme of study	Software	Hardware
<b>4.1</b> <b>We are software developers</b> Developing a simple educational game	Pupils learn to: <ul style="list-style-type: none"> <li>develop an educational computer game using selection and repetition</li> <li>understand and use variables</li> <li>start to debug computer programs</li> <li>recognise the importance of user interface design, including consideration of input and output.</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>	Main: <ul style="list-style-type: none"> <li>Scratch</li> </ul> Alternatives: <ul style="list-style-type: none"> <li>Snap!</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop/Chromebook computers or tablets</li> <li>Microphones (optional)</li> </ul>
<b>4.2</b> <b>We are makers</b> Coding for micro:bit	Pupils learn: <ul style="list-style-type: none"> <li>about the input – process – output model of computation</li> <li>about the inputs and outputs available on a BBC micro:bit</li> <li>to program using the MakeCode block-based environment</li> <li>to test and debug programs they write, using an on-screen simulator and the micro:bit</li> <li>how to convert and transfer a program written on screen to the micro:bit.</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.</li> </ul>	<ul style="list-style-type: none"> <li>Microsoft MakeCode</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop computers</li> <li>BBC micro:bits (with USB cables and battery packs)</li> </ul>
<b>4.3</b> <b>We are musicians</b> Creating a piece of music in GarageBand	Pupils learn to: <ul style="list-style-type: none"> <li>create a repeating percussion rhythm</li> <li>play music using virtual instruments</li> <li>compose or edit tunes using the piano roll (pitch and duration) tool</li> <li>perform electronic music using pre-recorded loops, and create their own loops</li> <li>create a multi-track composition or performance using multiple instruments</li> <li>give feedback to others on their compositions and performances.</li> </ul>	<ul style="list-style-type: none"> <li>Use sequence and repetition; work with various forms of input and output.</li> <li>Be discerning in evaluating digital content.</li> <li>Select, use and combine a variety of software on a range of digital devices to design and create a range of content that accomplishes given goals.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour.</li> </ul>	<ul style="list-style-type: none"> <li>GarageBand</li> </ul>	<ul style="list-style-type: none"> <li>iPads</li> <li>Headphones</li> <li>Musical instruments such as MIDI keyboards (optional)</li> </ul>

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<b>4.4</b> <b>We are bloggers</b> Sharing experiences and opinions	Pupils learn to: <ul style="list-style-type: none"> <li>become familiar with blogs as a medium and a genre of writing</li> <li>create a sequence of blog posts on a theme</li> <li>incorporate additional media</li> <li>comment on the posts of others</li> <li>develop a critical, reflective view of a range of media, including text.</li> </ul>	<ul style="list-style-type: none"> <li>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.</li> <li>Use a variety of software (including Internet services) on a range of digital devices to design and create a range of content that accomplish given goals.</li> <li>Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour.</li> </ul>	Main: <ul style="list-style-type: none"> <li>Blogging tool such as WordPress or Blogger</li> <li>Audacity</li> <li>iMovie</li> <li>Camera app</li> <li>Snapseed</li> </ul> Alternatives: <ul style="list-style-type: none"> <li>Seesaw</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop computers</li> <li>Digital cameras</li> <li>Audio recorders or tablets</li> </ul>
<b>4.5</b> <b>We are artists</b> Fusing geometry and art	Pupils learn to: <ul style="list-style-type: none"> <li>develop an appreciation of the links between geometry and art</li> <li>become familiar with the tools and techniques of a vector graphics package</li> <li>develop an understanding of turtle graphics</li> <li>experiment with the tools available, refining and developing their work as they apply their own criteria to evaluate it and receive feedback from their peers</li> <li>develop some awareness of computer-generated art.</li> </ul>	<ul style="list-style-type: none"> <li>Use sequence, selection and repetition in programs; work with variables and various forms of output.</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 content that accomplish given goals.</li> </ul>	Main: <ul style="list-style-type: none"> <li>Inkscape</li> <li>Scratch</li> </ul> Alternatives: <ul style="list-style-type: none"> <li>Vectornator X (iPad)</li> <li>Google Draw (Chromebooks)</li> <li>Logo</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop/ Chromebook computers or tablets</li> </ul>
<b>4.6</b> <b>We are meteorologists</b> Presenting the weather	Pupils learn to: <ul style="list-style-type: none"> <li>understand different measurement techniques for weather – both analogue and digital</li> <li>use computer-based data logging to automate the recording of some weather data</li> <li>use spreadsheets to create charts</li> <li>analyse data, explore inconsistencies in data and make predictions</li> <li>practise using presentation and video software.</li> </ul>	<ul style="list-style-type: none"> <li>Work with variables and various forms of input and output.</li> <li>Use logical reasoning to explain how some simple algorithms work.</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.</li> </ul>	Main: <ul style="list-style-type: none"> <li>Google Sheets</li> <li>Google Slides</li> </ul> Alternatives: <ul style="list-style-type: none"> <li>Microsoft Excel</li> <li>Microsoft PowerPoint</li> </ul>	<ul style="list-style-type: none"> <li>Laptop/desktop/ Chromebook computers or tablets</li> <li>Smart home weather station or other equipment for measuring for weather</li> </ul>