

## Overview of units

Unit	Learning outcomes	Computing programme of study	Software	Hardware
<b>1.1</b> <b>We are treasure hunters</b> Solving problems using programmable toys	<b>Pupils learn:</b> <ul style="list-style-type: none"> <li>● that a programmable robot can be controlled by inputting a sequence of instructions</li> <li>● to develop and record sequences of instructions as an algorithm</li> <li>● to program a robot to follow their algorithm</li> <li>● to debug programs</li> <li>● to predict how their programs will work.</li> </ul>	<ul style="list-style-type: none"> <li>● Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute them by following precise and unambiguous instructions.</li> <li>● Create and debug simple programs.</li> <li>● Use logical reasoning to predict the behaviour of simple programs.</li> </ul>	<b>Main:</b> Blue-Bot app  <b>Alternatives:</b> <ul style="list-style-type: none"> <li>● Programming interface for alternative toys</li> <li>● Scratch Bee-Bot emulator</li> </ul>	<b>Main:</b> Blue-Bot (programmable toy)  <b>Alternatives:</b> Other programmable toys such as: <ul style="list-style-type: none"> <li>● Bee-Bot</li> <li>● Cubetto</li> <li>● Roamer Too</li> <li>● STEM Robot Mouse</li> </ul>
<b>1.2</b> <b>We are TV chefs</b> Filming the steps of a recipe	<b>Pupils learn to:</b> <ul style="list-style-type: none"> <li>● break down a process into simple, clear steps (an algorithm)</li> <li>● use different features of a video camera</li> <li>● use a video camera to capture moving images</li> <li>● edit a video to include an audio commentary</li> <li>● develop collaboration skills</li> <li>● discuss their work and think about how it could be improved.</li> </ul>	<ul style="list-style-type: none"> <li>● Understand what algorithms are.</li> <li>● Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>● Recognise common uses of information technology beyond school.</li> </ul>	<b>Main:</b> Camera and iMovie apps on the iPad  <b>Alternatives:</b> Video editing software such as: <ul style="list-style-type: none"> <li>● WeVideo</li> <li>● Microsoft Photos</li> </ul>	<b>Main:</b> iPads, ideally with tripods and clamps  <b>Alternatives:</b> <ul style="list-style-type: none"> <li>● Laptop/desktop computers and cameras with movie mode</li> <li>● Android tablets</li> </ul>
<b>1.3</b> <b>We are digital artists</b> Creating work inspired by great artists	<b>Pupils learn:</b> <ul style="list-style-type: none"> <li>● how to select and set brushes and colours</li> <li>● to create artwork in a range of styles on iPads</li> <li>● to use the undo function if they make mistakes, and to encourage experimentation</li> <li>● to use multiple layers in their art</li> <li>● to transform layers</li> <li>● to paint on top of photographs.</li> </ul>	<ul style="list-style-type: none"> <li>● Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>● Recognise common uses of information technology beyond school.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>● Brushes Redux</li> <li>● Autodesk SketchBook</li> </ul> <b>Alternatives:</b> <ul style="list-style-type: none"> <li>● Microsoft Paint</li> <li>● Microsoft Paint 3D</li> <li>● PaintZ for Chromebook</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>● iPads</li> <li>● Styluses (optional)</li> </ul> <b>Alternatives:</b> <ul style="list-style-type: none"> <li>● Laptop/desktop computers</li> <li>● Android tablets</li> <li>● Chromebooks</li> </ul>

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<b>1.4</b> <b>We are publishers</b> Creating a multimedia eBook about our achievements	<b>Pupils learn to:</b> <ul style="list-style-type: none"> <li>plan a small multimedia eBook</li> <li>choose and import images</li> <li>record audio commentary</li> <li>add and format titles and other text</li> <li>think carefully about protecting their privacy</li> <li>respect other people’s copyright</li> <li>revise and improve their work.</li> </ul>	<ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>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.</li> <li>Recognise common uses of information technology beyond school.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>Book Creator</li> <li>Google Photos</li> </ul> <b>Alternatives:</b> <ul style="list-style-type: none"> <li>Google Slides</li> <li>Microsoft PowerPoint</li> </ul>	<b>Main:</b> iPads  <b>Alternatives:</b> <ul style="list-style-type: none"> <li>Laptop/desktop computers</li> <li>Chromebooks</li> </ul>
<b>1.5</b> <b>We are rhythmic</b> Creating sound patterns in ScratchJr and GarageBand	<b>Pupils learn to:</b> <ul style="list-style-type: none"> <li>record audio on an iPad</li> <li>program sprites to playback recorded audio in ScratchJr</li> <li>program ScratchJr to create repeating rhythms using recorded audio</li> <li>explore different effects that can be applied to audio</li> <li>create a repeating percussion pattern using a virtual drum machine</li> <li>experiment with a range of virtual instruments.</li> </ul>	<ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>Recognise common uses of information technology beyond school.</li> <li>Understand what algorithms are.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>ScratchJr app</li> <li>GarageBand</li> </ul> <b>Alternatives:</b> <ul style="list-style-type: none"> <li>Scratch</li> <li>Audacity</li> <li>LMMS (Linux Multimedia Studio)</li> <li>Soundtrap</li> </ul>	<b>Main:</b> iPads (ideally with tripods and clamps)  <b>Alternatives:</b> <ul style="list-style-type: none"> <li>Laptop/desktop computers</li> <li>Chromebooks</li> </ul>
<b>1.6</b> <b>We are detectives</b> Using data to solve clues	<b>Pupils learn:</b> <ul style="list-style-type: none"> <li>how data can be structured as records with fields for information</li> <li>how data can be organised into groups and subgroups</li> <li>how data can be structured as a tree</li> <li>how data can be organised into a table</li> <li>how data in a table can be filtered and searched.</li> </ul>	<ul style="list-style-type: none"> <li>Use technology purposefully to create, organise, store, manipulate and retrieve digital content.</li> <li>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.</li> <li>Recognise common uses of information technology beyond school.</li> </ul>	<b>Main:</b> <ul style="list-style-type: none"> <li>Popplet</li> <li>Google Forms</li> <li>Google Sheets</li> </ul> <b>Alternatives:</b> <ul style="list-style-type: none"> <li>FreeMind</li> <li>Bubbl.us</li> <li>MindMeister</li> <li>Microsoft Forms</li> <li>Microsoft Excel</li> </ul>	<b>Main:</b> iPads  <b>Alternatives:</b> <ul style="list-style-type: none"> <li>Laptop/desktop computers</li> <li>Chromebooks</li> <li>Android tablets</li> </ul>