Overview of units

Unit	Learning outcomes	Computing programme of study	Software	Hardware
1.1 **We are treasure hunters** Solving problems using programmable toys	Pupils learn: • that a programmable robot can be controlled by inputting a sequence of instructions • to develop and record sequences of instructions as an algorithm • to program a robot to follow their algorithm • to debug programs • to predict how their programs will work.	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute them by following precise and unambiguous instructions. • Create and debug simple programs. • Use logical reasoning to predict the behaviour of simple programs.	*Main:* Blue-Bot app *Alternatives:* • Programming interface for alternative toys • Scratch Bee-Bot emulator	*Main:* Blue-Bot (programmable toy) *Alternatives:* Other programmable toys such as: • Bee-Bot • Cubetto • Roamer Too • STEM Robot Mouse
1.2 **We are TV chefs** Filming the steps of a recipe	Pupils learn to: • break down a process into simple, clear steps (an algorithm) • use different features of a video camera • use a video camera to capture moving images • edit a video to include an audio commentary • develop collaboration skills • discuss their work and think about how it could be improved.	• Understand what algorithms are. • Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Recognise common uses of information technology beyond school.	*Main:* Camera and iMovie apps on the iPad *Alternatives:* Video editing software such as: • WeVideo • Microsoft Photos	*Main:* iPads, ideally with tripods and clamps *Alternatives:* • Laptop/desktop computers and cameras with movie mode • Android tablets
1.3 **We are digital artists** Creating work inspired by great artists	Pupils learn: • how to select and set brushes and colours • to create artwork in a range of styles on iPads • to use the undo function if they make mistakes, and to encourage experimentation • to use multiple layers in their art • to transform layers • to paint on top of photographs.	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Recognise common uses of information technology beyond school.	*Main:* • Brushes Redux • Autodesk SketchBook *Alternatives:* • Microsoft Paint • Microsoft Paint 3D • PaintZ for Chromebook	*Main:* • iPads • Styluses (optional) *Alternatives:* • Laptop/desktop computers • Android tablets • Chromebooks

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1.4 **We are publishers** Creating a multimedia eBook about our achievements	Pupils learn to: • plan a small multimedia eBook • choose and import images • record audio commentary • add and format titles and other text • think carefully about protecting their privacy • respect other people's copyright • revise and improve their work.	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • 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. • Recognise common uses of information technology beyond school.	*Main:* • Book Creator • Google Photos *Alternatives:* • Google Slides • Microsoft PowerPoint	*Main:* iPads *Alternatives:* • Laptop/desktop computers • Chromebooks
1.5 **We are rhythmic** Creating sound patterns in ScratchJr and GarageBand	Pupils learn to: • record audio on an iPad • program sprites to playback recorded audio in ScratchJr • program ScratchJr to create repeating rhythms using recorded audio • explore different effects that can be applied to audio • create a repeating percussion pattern using a virtual drum machine • experiment with a range of virtual instruments.	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Recognise common uses of information technology beyond school. • Understand what algorithms are.	*Main:* • ScratchJr app • GarageBand *Alternatives:* • Scratch • Audacity • LMMS (Linux Multimedia Studio) • Soundtrap	*Main:* iPads (ideally with tripods and clamps) *Alternatives:* • Laptop/desktop computers • Chromebooks
1.6 **We are detectives** Using data to solve clues	Pupils learn: • how data can be structured as records with fields for information • how data can be organised into groups and subgroups • how data can be structured as a tree • how data can be organised into a table • how data in a table can be filtered and searched.	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • 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. • Recognise common uses of information technology beyond school.	*Main:* • Popplet • Google Forms • Google Sheets *Alternatives:* • FreeMind • Bubbl.us • MindMeister • Microsoft Forms • Microsoft Excel	*Main:* iPads *Alternatives:* • Laptop/desktop computers • Chromebooks • Android tablets