Year 5 - Computing

Overview of units

Unit	Learning outcomes	Computing programme of study	Software	Hardware
5.1 **We are game developers** Developing an interactive game	Pupils learn to: • create original artwork and sound for a game • design and create a computer program for a computer game, which uses sequence, selection, repetition and variables • detect and correct errors in their computer game • use iterative development techniques (making and testing a series of small changes) to improve their game.	• Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems and solving 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.	*Main:* • Scratch *Alternatives:* • Snap! • Kodu	• Laptop/desktop/ Chromebook computers or tablets • Microphones (optional)
5.2 **We are cryptographers** Cracking codes	Pupils learn to: • be familiar with semaphore and Morse code • understand the need for private information to be encrypted • encrypt and decrypt messages in simple ciphers • appreciate the need to use complex passwords and to keep them secure • have some understanding of how encryption works on the Internet.	• 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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	• Scratch	• Laptop/desktop/ Chromebook computers or tablets
5.3 **We are architects** Creating a virtual space	Pupils learn to: • understand the work of architects, designers and engineers working in 3-D • develop familiarity with a simple CAD (computer-aided design) tool • develop spatial awareness by exploring and experimenting with a 3-D virtual environment • develop greater aesthetic awareness.	• 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 information.	*Main:* • Trimble SketchUp • Screen recorder *Alternatives:* • CoSpaces • Minecraft Education Edition	• Laptop/desktop/ Chromebook computers or tablets

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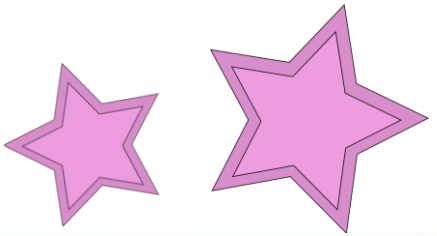

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5.4 **We are web developers** Making sense of the Internet and building a website	Pupils learn: • the name and function of components making up the school's network • how information is passed between the components that make up the Internet • what the source code for a web page looks like, and how it can be edited • how a website can be structured • how to add content to a web page.	• 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. • 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. • Be discerning in evaluating digital content.	• Google Chrome • Google Sites	• Laptop/desktop/ Chromebook computers or tablets
5.5 **We are adventure gamers** Creating an interactive adventure using presentation software	Pupils learn: • how to plan a non-linear presentation • to create text as part of a presentation • to add and edit images in a presentation • to use hyperlinks for navigation between the slides of a presentation • to record and add audio narration to a presentation • to use commenting tools to give feedback on a presentation.	• Use search technologies effectively. • Use a variety of software (including Internet services) on a range of digital devices to design and create content that accomplish given goals, including presenting information. • Use technology safely, respectfully and responsibly.	*Main:* • Google Slides • Voice Recorder *Alternative:* • Microsoft PowerPoint	• Laptop/desktop/ Chromebook computers or iPads (reduced functionality)
5.6 **We are VR designers** Experimenting with virtual and augmented reality	Pupils learn to: • explore real-world and imagined locations in VR (if possible) • create 360° photosphere images • link physical objects to digital content using QR codes • create their own VR scene • program objects and interactions in VR.	• 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. • 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 information.	*Main:* • Google Street View (Google Maps) • GarageBand • CoSpaces *Alternative:* • Voice Recorder	*Main:* • iPads/tablets *Alternatives:* • Smartphones • Google Cardboard