Overview of units

Unit	Expectations	Computing PoS	Software/Apps	Hardware
5.1 **We are game developers** Developing an interactive game	• 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; 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. • Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. • 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…	**Software:** Scratch/ Snap! (or Kodu) **Apps:** Pyonkee	Desktop/laptop computers, microphones
5.2 **We are cryptographers** Cracking codes	• 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 web.	• 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.	**Software:** Scratch 2.0/Snap!, The Black Chamber (website) **Apps:** The Black Chamber in the web browser, Pyonkee	Laptop/desktop computers
5.3 **We are artists** Fusing geometry and art	• Develop an appreciation of the links between geometry and art. • Become familiar with the tools and techniques of a vector graphics package. • Develop an understanding of turtle graphics. • 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. • Develop some awareness of computer-generated art, in particular fractal-based landscapes.	• 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. • 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.	**Software:** Inkscape/ Adobe Illustrator/ CorelDRAW, Scratch/ Snap!, Terragen, Logo **Apps:** Adobe Ideas/neu. draw, Pyonkee, i-Logo	Laptop or desktop computers/tablets

5.4 **We are web developers** Creating a website about cyber safety	• Develop their research skills to decide what information is appropriate. • Understand some elements of how search engines select and rank results. • Question the plausibility and quality of information. • Develop and refine their ideas and text collaboratively. • Develop their understanding of online safety and responsible use of technology.	• 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 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 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.	**Software:** Google, Bing, Google Sites/wiki tool in the school's learning platform/WordPress/ Adobe Slate **Apps:** Google Search app, Google Sites via browser/WordPress/ Adobe Slate	Desktop or laptop computers/tablets
5.5 **We are bloggers** Sharing experiences and opinions	• Become familiar with blogs as a medium and a genre of writing. • Create a sequence of blog posts on a theme. • Incorporate additional media. • Comment on the posts of others. • Develop a critical, reflective view of a range of media, including text.	• 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.	**Software:** WordPress/ Blogger/learning platform blogging tool or similar, GIMP, Audacity®, Microsoft Windows Movie Maker® **Apps:** WordPress, Camera, Snapseed	Computers, digital cameras, audio recorders/tablets
5.6 **We are architects** Creating a virtual space	• Understand the work of architects, designers and engineers working in 3D. • Develop familiarity with a simple CAD (computer aided design) tool. • Develop spatial awareness by exploring and experimenting with a 3D 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 data and information.	**Software:** Trimble SketchUp (used for 3D modelling), Screencast-o-matic (for final screencast), Minecraft **Apps:** Home Design 3D/3dVAS, Sketchup Viewer	Laptops/ computers