Christ Church C.E Primary School

Computing and ICT Scheme of Work for Year 5

Term	Unit title & summary	Expectations	Computing Programme of Study	Software Apps	Hardware	Cross Curricular Links
Autumn 1	**We are bloggers** Sharing experiences and opinions	• Become familiar with blogs as a medium and 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.	**Focus: Communication/Collaboration** • 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	• Laptops • Desktops • Cameras • iPads	• English • History

E-Safety Coverage

The pupils write content for their own or a shared blog, thinking carefully about what can be appropriately shared online. They consider issues of copyright and digital footprint as well as what constitutes acceptable behaviour when commenting on others blog posts. The pupils also think about the importance of creating high-quality online content and become more discerning in evaluating content as they review others' blogs. If the pupils' blogs are publicly accessible, it is important that any comments are moderated by their teacher; it is worth discussing with the pupils why the comments should be moderated.

Term	Unit title & summary	Expectations	Computing Programme of Study	Software Apps	Hardware	Cross Curricular Links
Autumn 2	**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	**Focus: Creativity** • Use sequence, selection and repetition in programs; work with variables and various forms of input and output. • Use logical reasoning to explain how some algorithms work and to detect and correct errors in algorithms and programs. • Select, use and combine a variety of software (including internet services)	**Software:** Inkscape/ Adobe illustrator/ CorelDRAW, Scratch, Terragen Classic, Logo **Apps:** Adobe Ideas/ neu.draw, Snap!	• Laptops • Desktops • iPads	• Maths • PE • Art & Design • RE

| | | it and receive feedback from their peers. • Develop some awareness of computer-generated art, in particular fractal-based landscapes | 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. | | | |

The unit provides an opportunity to reinforce messages around safe searching and evaluating the quality of online content. If the pupils upload their work for others to see, they should consider the importance of protecting personal information as well as recognising that they are sharing their own copyrighted work with an audience.

Term	Unit title & summary	Expectations	Computing Programme of Study	Software Apps	Hardware	Cross Curricular Links
Spring 1	**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 e-safety and responsible use of technology.	**Focus: Computer networks** • 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 **Apps:** Google Search app, Google sites via browser	• Laptops • Desktops • iPads	• English • History

E-safety forms the focus of this unit, with the pupils working collaboratively to develop a website in which they present their own authoritative content on a broad range of issues around the safe and responsible use of technology. In doing so, they consider the reliability and bias of online content, how to contribute positively to a shared resource, and how to use search engines safely and effectively.

Term	Unit title & summary	Expectations	Computing Programme of Study	Software Apps	Hardware	Cross Curricular Links
Spring 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.	**Focus: Computational thinking** • Use logical reasoning to explain how some 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. The Black Chamber (website) **Apps:** Snap! The Balck Chamber in the browser (safari)	• Laptops • Desktops • iPads	• Maths • Science • D & T • History • PSHE
E-Safety Coverage						
The pupils learn how information can be communicated in secret over open channels, including the internet, using cryptography. They learn about the public key system used to sign and encrypt content on the web, and how they can check the security certificates of encrypted websites. They learn about the importance of password security for online and consider what makes a secure password.						
Summer 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.	**Focus: Programming** • 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 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 (or Kodu) **Apps:** Snap! In the web browser	• Laptops • Desktops • iPads • Microphones	• Art & Design • Music

The pupils need to consider copyright when sourcing images or media for games and/or their own work to the Scratch community site. Searching content for their games or viewing others' games also offers an opportunity to develop safe search habits. If the pupils participate in the Scratch community, they need to think about what information they can share and how to participate positively in an online community, as well as obtaining parental permission. The pupils might also consider some personal implications of playing games, perhaps including violent computer games.

Term	Unit title & summary	Expectations	Computing Programme of Study	Software Apps	Hardware	Cross Curricular Links
Summer 2	**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.	**Focus: Productivity** • 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) **Apps:** Home Design 3D/ 3dVAS	• Laptops • Desktops • iPads	• Maths • Science • Art & Design

E-Safety Coverage

The pupils should observe good practice when searching for and selecting digital content. If the pupils choose to locate their 3D models geographically, they should avoid sharing private information. The pupils should think about copyright when adding content to their model or publishing images or videos of their model.