

| Cycle A | Unit Title | Expectations | Computing Programme of Study | Software / Apps | Hardware |
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| Autumn 1 | We are Architects | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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), Screencastomatic (for final screencast), Minecraft Apps: Home Design 3D/3dVAS, Sketchup Viewer | Laptops/computers |
| Autumn 2 | We are app planners | <ul style="list-style-type: none"> Develop an awareness of the capabilities of smartphones and tablets. Understand geolocation, including GPS. Identify interesting, solvable problems. Evaluate competing products. Pitch a proposal for a smartphone or tablet app. | <ul style="list-style-type: none"> 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. Work with ... various forms of input and output. | Software: App Inventor/ TouchDevelop, Picasa Web, Google Drive Presentation/ Prezi or similar Apps: Codea, TouchDevelop | Computers and tablets or smartphones (can be done with a phone emulator) |
| Spring 1 | We are interface designers | <ul style="list-style-type: none"> Work collaboratively to design the app's interface. Use wireframing tools to create a design prototype of their app. Develop or source the individual interface | <ul style="list-style-type: none"> 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. | Software: Justinmind Prototyper/Pencil Project/Microsoft PowerPoint® Apps: SketchyPad or iMockups (pay-for apps) | Laptop/desktop/tablets |

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| | | <p>components (media assets) they will use.</p> <ul style="list-style-type: none"> • Address accessibility and inclusion issues. • Document their design decisions and the process they've followed. | <ul style="list-style-type: none"> • 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. • Be discerning in evaluating digital content. • Recognise acceptable/unacceptable behaviour. | | |
| Spring 2 | We are app developers | <ul style="list-style-type: none"> • Become familiar with another programming toolkit or development platform. • Import existing media assets to their project. • Write down the algorithms for their app. • Program, debug and refine the code for their app. • Thoroughly test and evaluate their app. | <ul style="list-style-type: none"> • 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, including collecting, analysing, evaluating and presenting data and information. | <p>Software: App Inventor/ TouchDevelop</p> <p>Apps: TouchDevelop/ Codea</p> | Computers and tablets/ smartphones/ phone emulator |
| Summer 1 | We are marketers | <ul style="list-style-type: none"> • Consider key marketing messages, including identifying a unique selling point. • Develop a printed flyer or brochure incorporating text and images. • Further develop knowledge, skills and understanding in relation to creating a website. • Further develop skills relating to shooting and editing video. | <ul style="list-style-type: none"> • 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) ... to design and create ... content that accomplishes given goals, including collecting, analysing, evaluating and presenting ... information. • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. | <p>Software: Microsoft Publisher™, WordPress/Google Sites, Movie Maker® and other programs chosen by the pupils</p> <p>Apps: Pages, WordPress, iMovie and other apps chosen by the pupils</p> | Laptops/ desktop computers, cameras |

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| Summer 2 | We are Web Developers | <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • 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 |
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| Cycle B | Unit Title | Expectations | Computing Programme of Study | Software / Apps | Hardware |
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| Autumn 1 | We are Game Developers | <ul style="list-style-type: none"> • 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 | <ul style="list-style-type: none"> • 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 |

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| | | <ul style="list-style-type: none"> • (making and testing a series of small changes) to improve their game. | | | |
| Autumn 2 | We are Cryptographers | <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • 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 |
| Spring 1 | We are Artists | <ul style="list-style-type: none"> • 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. | <ul style="list-style-type: none"> • 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 |

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| | | <ul style="list-style-type: none"> Develop some awareness of computergenerated art, in particular fractal-based landscapes. | | | |
| Spring 2 | We are Bloggers | <ul style="list-style-type: none"> 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. | <ul style="list-style-type: none"> 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 |
| Summer 1 | We are project managers | <ul style="list-style-type: none"> Scope a project to identify different components that must be successfully combined. Identify their existing talents and plan how they can develop further knowledge and skills. Identify the component tasks of a project and develop a timeline to track progress. Identify the resources they'll need to accomplish a project. | <ul style="list-style-type: none"> Solve problems by decomposing them into smaller parts. 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. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. | Software: Google Apps for Education/VLE/GitHub/Basecamp Apps: Web browser (Safari) | Laptop or desktop computers, internet access |

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| | | <ul style="list-style-type: none"> • Use web-based research skills to source tools, content and other resources. • Consider strategies to ensure the quality of a collaborative project. | | | |
| Summer 2 | We are market researchers | <ul style="list-style-type: none"> • Create a set of good survey questions. • Analyse the data obtained from a survey. • Work collaboratively to plan questions. • Conduct an interview or focus group. • Analyse and interpret the information obtained from interviews or a focus group. • Present their research findings. | <ul style="list-style-type: none"> • 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 Drive applications/ Microsoft Office, Microsoft Windows Movie Maker® Apps: Web browser, Keynote, iMovie | Laptop/desktop computers, internet access |