

Computing Progression Map

Curriculum overview

Computing forms part of Downsell Primary's Creative Curriculum. The learning in Computing is sometimes linked to a key text for that half term.

Year Group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	Topic: Toys Toy photography • Moving skills • Finding toy images online • Using toy images • Editing toy images • Creating documents using toy images	Topic: Traction Man's Adventures Beebots • Position and direction • Algorithms • Creating algorithms • Debugging • Investigation • Map routes linked to text • Escape routes linked to text	Topic: Lighthouses Word processing • Typed letter home • Postcard home using text and images • Formatting skills • Editing skills	Topic: Arctic Explorers Animals • Ebooks • Powerpoints • Classification	Topic: Space Coding • Space travel • Rocket launch • Animating rocket launch • Recording sound messages from space	Topic: Travel Algorithms • Travel routes • Commands • Procedures
Year 2	Topic: Africa Minibeasts data • Digital tallies and photos • Digital maps • Edit and use digital photos • Presenting data • Sorting and classifying	Topic: Rosa Parks and Nelson Mandela Research and presentation • Mind mapping • Search skills • Presentation	Topic: London Digital communication • Communicating safely • Sending messages • Sending selfies • Joining groups	Topic: The Great Fire Coding • Motion blocks • Running scripts • Programming sprites • Speed blocks	Topic: Islands Photography • Photography skills • Photo editing • Photo slideshows • Animating photos	Topic: Florence Nightingale Coding • Motion • Costumes • Sounds • Starting • Repeat • Multiple actions

Year 3	Topic: Ancient Greece Animation ● create an algorithm ● animate sprites ● add sounds ● program a sprite ● use time to sequence events	Topic: Romans Animation ● program a sprite to switch between costumes ● program sprites to speak when they change costume ● create start and end screens ● use a broadcast in an animation ● add sounds	Topic: Italy Networks ● understand data storage ● how data is packaged and sent across networks ● how the internet works ● trace the route a data packet takes ● understand data security	Topic: Mayans Religion ● Use sound recording software ● Use stop-motion animation software ● Take photos with a digital camera ● Take a video with a digital camera ● Upload digital resources to a website	Topic: Ancient Egypt Egyptian patterns ● Research Egyptian patterns ● repeated patterns ● repeated blocks ● using nested loops ● sliding variables	Topic: River Nile Weather data ● record the weather digitally ● record and store weather data ● present data from a spreadsheet ● include weather data collected in a powerpoint presentation and animation
Year 4	Topic: Rabbits Spreadsheets ● become familiar with spreadsheets ● use a spreadsheet to work out calculations ● use a spreadsheet to budget ● use SUM to calculate a total ● create and use a spreadsheet	Topic: Ancient Greece Probots ● Introduce probot ● Pen feature probot ● Drawing shapes ● Entering commands ● Probot pictures	Topic: Vikings Digital music ● create music using an online program ● use a sound editing program ● edit digital sound ● add effects to a sound clip ● use digital sequencing software to mix tracks ● use code to control dance moves	Topic: Rainforests Scratch game ● create an algorithm for a game ● use variables in a game ● add levels to a game ● add graphics to a game ● test my game and debug	Topic: Coastlines and Rivers Data security ● send and receive messages written in code ● use encryption keys to decipher encrypted messages ● encrypt and decrypt messages in a simple cipher ● understand the need to use complex passwords and to keep them secure	Topic: Normans Websites ● gather and create content for a website ● build a website ● add pages to a website ● add content to a website ● embed video and media in a websites

Year 5	Topic: Queen Victoria's Reign Victorian houses • create a 3D sculpture • create a 3D virtual environment • add 2D elements to a virtual 3D environment • add 3D furniture to a virtual 3D environment • record a virtual tour	Topic: Local Area Maths quiz • program a maths quiz using conditionals • use variables in a game • use a time variable in a game • change the way a sprite appears on screen • program 'start' and 'finish' buttons • broadcast a message	Topic: Stone Age HTML codes • know that webpages are built using HTML • begin to use HTML to build a website • structure a webpage using HTML code • know that CSS can set the style of a webpage • use CSS to set the style of a webpage	Topic: America Scratch paint package • program a sprite to draw • program multiple costumes for a pencil sprite • develop a clear button and an eraser in a paint package • change pen colour creating a rainbow effect • give a user choices through using a slider variable	Topic: The Great Plague Creating podcast • Use software to create own sounds • Combine audio effects • Research and plan digital content for radio podcast about Plague • Use software to create and present digital content for radio podcast • Use ideas from podcast advertisements to record own Plague podcast	Topic: Shipwrecked Robots • program to display an image • program a to display text • program to count time • program to pick randomly • build a programmable robot • program a robot to carry out actions
Year 6	Topic: Blitz App design • research and develop content for an app • develop the layout and interface of an app • consider app design when adding images to an app • build content for an app	Topic: Pollution Button apps • create a talking app using a text to speech component • use sensor within an app • program a button to make a sound • program an app with multiple sound buttons • test, review and market an app	Topic: Crime and Punishment Selection apps • design the interface of an app • program a button component in an app • design and code a list app • develop an app further • market an app	Topic: It's the Law List apps • use a list in a magic 8 ball app • program an app to pick an item at random • test an app and consider the views of others when marketing it • animate a touch sensitive object in an app	Topic: Looking after Britain Social media and app safety • explore issues of self-image and online identity • consider the concept of online representation and reality • explore issues of positive online interaction	Topic: Japan Coding • defining coding and computer science • making connections between computer science and the real world • coding programs that respond to timed events • encryption codes

	• download an app for testing and debugging			• market an app in different ways	• think about the privacy and security of what I put online • explore issues of online bullying	
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Computing at Downsell Primary School

Intent	It is our intention to enable children to find, explore, analyse, exchange and present information. We also focus on developing the skills necessary for children to be able to use information in an effective way. We want children to know more, remember more and understand more in computing so that they leave primary school computer literate. Computing skills are a major factor in enabling children to be confident, creative and independent learners and it is our intention that children have every opportunity available to allow them to achieve this. We intend to build a computing curriculum that develops pupil's learning and results in the acquisition of knowledge of the world around them that ensures all pupils can understand and apply the fundamental principles and concepts of computer science, including logic, algorithms and data representation can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems. We intend to build a computing curriculum that prepares pupils to live safely in an increasingly digital British society where pupils can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems.
Implementation	● A clear and effective, cross curricular scheme of work that provides coverage in line with the National Curriculum ● Teaching and learning should facilitate progression across all key stages within the strands of digital literacy, information technology and computer science ● Access to resources which aid in the acquisition of skills and knowledge. ● Children will have access to the hardware (computers, tablets, programmable equipment) and software that they need to develop knowledge and skills of digital systems and their applications ● Children will have the opportunity to explore and respond to key issues such as digital communication, cyberbullying, online safety, security, plagiarism and social media ● Wider curriculum links and opportunities for the safe use of digital systems are considered in wider curriculum planning ● As well as opportunities underpinned within the scheme of work, children will also spend time further exploring the key issues associated with online safety ● Parents are informed when issues relating to online safety arise and further information/support is provided if required

Impact	Children will be confident users of technology, able to use it to accomplish a wide variety of goals, both at home and in school. Children will have a secure and comprehensive knowledge of the implications of technology and digital systems. This is important in a society where technologies and trends are rapidly evolving. Children will be able to apply the British values of democracy, tolerance, mutual respect, rule of law and liberty when using digital systems.
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Computing Programmes of Study: Key Stage 1 and 2 National curriculum

Key Stage 1:

Pupils should be taught to:

- understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- 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.

	Learning Intentions	Skills
Year 1	To animate still photos To search for pictures on the web To use images found on the web To edit images found online To create a document using images	• use technology purposefully to create, organise, store, manipulate and retrieve digital content • recognise common uses of information technology beyond school • use technology safely and respectfully
Year 2	To use motion blocks in a program To run two scripts at the same time To program multiple sprites To use wait and speed blocks in a program To make sprites tell each other when to start	• understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions • create and debug simple programs • use logical reasoning to predict the behaviour of simple programs

Key Stage 2:

Pupils should be taught to:

- 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
- 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.

	Learning Intentions	Skills
Year 3	To understand data storage To understand how data is packaged and sent across networks To explain how the internet works To trace the route a data packet takes when we click a link online To begin to understand data security	•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
Year 4	To become familiar with spreadsheets To use a spreadsheet to work out calculations To use a spreadsheet to budget To use SUM to calculate a total To create and use a spreadsheet	•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.
Year 5	To program a maths quiz using conditionals To use variables in a game To use a time variable in a game To change the way a sprite appears on screen To program 'start' and 'finish' buttons To broadcast a message	•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

**Year
6**

To design the interface of an app
To program a button component in an app
To design and code a list app
To develop an app further
To market an app

- 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