

Computing Key Skills KS2

Area	Key Skill
Algorithms	<ul style="list-style-type: none"> • Solve open ended problems with a floor robot, screen turtle and other programmable devices • Design, write and run executable programs using a programming language (e.g. that used for a floor robot, Scratch, Kodu or Espresso Coding) • Be able to debug an algorithm and correct errors • Use repetition in programs to make them more efficient
	<ul style="list-style-type: none"> • Explore the effect of changing variables. Use them to make and test predictions • Use 'selection' in a programming sequence i.e. se 'if...then... else...' type actions or statements (e.g. if a character is touching the wall then bounce back, else move forwards) • Create simple flow diagrams to control physical devices or systems (real ones or on screen simulations) using inputs, outputs, including sensors
	<ul style="list-style-type: none"> • Predict how a provided algorithm will behave before testing it (e.g. write a program or procedure in symbols and ask pupils to 'write the story' of the outcome before testing it) • Represent an algorithm symbolically (e.g. as a flow chart) to plan a procedure • Develop algorithms which include 'if' statements (e.g. if the temperature drops below...) and loops (e.g. repeat an instruction four times)
	<ul style="list-style-type: none"> • Develop algorithms which include 'if' statements (e.g. if the temperature drops below..) and loops (e.g. repeat an instruction) • Develop more complex flow diagrams and procedures that draw on others (e.g. program traffic lights either end of a narrow bridge so that cars avoid collision) • Refine procedures (algorithms) to improve efficiency
Modelling and Simulations	<ul style="list-style-type: none"> • Create a simple program using an application such as Scratch or Kodu) to simulate a real or imaginary scenario (e.g. programming a sprite to move around a maze/a topographical representation of a town) • Create a program which demonstrates a sequencing loop (e.g. if the temperature rises to N degrees, turn on the fan, if the temperature drops to N-10 degrees, turn off the fan) • Create a program which includes a method of scoring (e.g. each time a sprite bumps into a particular object, increase the score and each time it bumps into another object, decrease the score) • Create a program that uses a timer and set variables as appropriate to the program (e.g. set a timer for a contestant to solve a maze puzzle within 30 seconds)

Computing Key Skills KS2

Text Processing and Multimedia	<ul style="list-style-type: none"> • Use different font sizes, colour and effects to communicate meaning for a given audience • Use layout, format, graphics and illustrations for different purposes or audiences • Insert and edit simple tables • Use 'page set-up' to select different page sizes and orientations • Use cut, copy and paste to refine and reorder content
	<ul style="list-style-type: none"> • Select suitable texts, sounds and graphics from electronic resources (e.g. Espresso) and use it appropriately • Select and import sounds from own recordings, create effects and music and import this from other sources • Select and import graphics from digital cameras, graphics packages and other sources and prepare for use (cropping, resizing, editing). • Create a range of hyperlinks and produce a non-linear, interactive presentation • Recognise key features of layout and use design features such as text boxes, columns and borders
	<ul style="list-style-type: none"> • Develop and use criteria to evaluate the design and layout when evaluating a range of websites, online resources and presentations • Understand how pages are linked together and recognise the need for clarity. Produce a diagram to show the links between pages • Develop the use of hyperlinks to produce more effective interactive, non-linear presentations • Make effective use of transitions and animations in presentations. Consider the effect on the audience and the appropriateness of such devices • Independently select and import images and video from digital cameras, graphics packages and other sources and prepare it for processing using ICT • Select and import sounds from their own recording, create their own effects and music and import from other sources • Format and edit work to improve clarity and mood. Use a range of tools (e.g. cut and paste) justify, tabs, insert and replace
	<ul style="list-style-type: none"> • Use reviewing tools in word processors to collaborate in evaluating other's work • Evaluate their design and make improvements through peer and self-evaluation
Digital Image Skills (Art Programs, Animation and Video)	<ul style="list-style-type: none"> • Acquire, store and retrieve images from cameras, scanners and the internet and begin to use paint packages or photo-manipulation software to change an image (e.g. apply different effects) • Select specific areas of a painting, copy and paste to make repeating patterns, Resize elements, investigate symmetry and reflection tools • Begin to independently capture, store, retrieve and edit a digital image • Develop greater control over the digital stills video camera and use the enhanced tools (Macro, Landscape, Zoom) • Discuss and evaluate the quality of their own and others' captured images and make decisions (e.g. keep, delete and change)
	<ul style="list-style-type: none"> • Create a short animated sequence from captured images in simple storyboarding software to communicate a specific idea • Capture footage from camcorders into simple movie editing software. Arrange, trim and cut clips to create a short film that conveys meaning • Import music and stills into video editing software and add to film projects • Add simple titles and credits
	<ul style="list-style-type: none"> • Use an object based graphics package to design and develop a plan to find a solution to a specific problem (e.g. design a child's

Computing Key Skills KS2

	<p>bedroom, garden, zoo, map, playground, crazy golf)</p> <ul style="list-style-type: none"> • Create images using a range of techniques to develop a particular style • Independently capture, store, retrieve and edit digital images to improve them • Refine and make appropriate changes through peer and self-evaluation • Understand issues relating to copyright of images (e.g. when selecting image sources)
<p style="text-align: center;">Sound and Music (sound capture and editing, podcasts and music composition)</p>	<ul style="list-style-type: none"> • Enhance a presentation by acquiring, storing and combining images from different sources • Independently capture, store, retrieve and edit digital images to improve them
	<ul style="list-style-type: none"> • Use ICT to select and record voice and sounds (e.g. Dictaphone, digital voice recorder, sound recorder in IWB software) • Use recorded sound files in other applications • Locate and use sound files from internet, CD ROM, learning platform and multimedia software (e.g. IWB software) • Select, import and edit existing sound files in sound editing software (e.g. Audacity) • Use music software to experiment capturing, repeating and reordering sound patterns
	<ul style="list-style-type: none"> • Use music software to create a simple multipart percussion composition • Use ICT to create and perform sounds or music that would otherwise not be possible live – e.g. playing a multipart piece or a very fast piece)
<p style="text-align: center;">Electronic Communication</p>	<ul style="list-style-type: none"> • Independently select, edit and combine sound files from internet sources to create a podcast file • Develop skills in manipulating sounds (such as reversing sounds, adding echo, altering speed etc.) and using the appropriately considering audience and purpose • Independently select and use a variety of appropriate devices to record musical and non-musical sounds • Create their own sounds and compositions to add to their presentations/films/images and photos • Use ICT to perform sounds or music that would otherwise not be possible live (e.g. playing a multi-track or at a very fast pace) • Use ICT to produce music for a specific purpose, considering the impact on the audience (e.g. length, style, genre etc.)
	<ul style="list-style-type: none"> • Log on to an email account, open emails, create and send appropriate replies • Create and send an email to a prearranged partner, selecting the recipient from a class address book • Create own address book/add to an existing one • Attach different files to emails
	<ul style="list-style-type: none"> • Contribute to discussion forums, blogs and surveys • Create own discussions, blogs and surveys • Contribute to a Wiki • Begin to use video conferencing as a class, if appropriate (e.g. with another class or school)
	<ul style="list-style-type: none"> • Use and refine skills while independently creating, sending and responding to emails, blogs and forums (with due regard for e-safety and with appropriate supervision) • Produce formal or informal messages appropriate to task or to solve problems (requesting information, sharing data etc.) • As a class or a group, make use of video conferencing technology to exchange ideas and collaborate on projects with other schools

Computing Key Skills KS2

Research	<ul style="list-style-type: none"> • Follow a simple search to find specific information from a website or CD ROM • Develop key questions and key words to search for specific information to answer a problem (e.g. 'where could be go on holiday?' would become 'holiday destinations') • Save and retrieve accessed information through the use of 'favourites', 'history' and 'save as...' • Use found information purposefully to complete specific tasks (e.g. copy, paste and edit relevant information) • Understand the dynamic of search engines and know that there are different search engines – some within sites, and some for the whole internet (e.g. Google). Use them appropriately • Use search engines for different media (e.g. Google Images, www.findsounds.com etc.) • Skim read and sift information to check its relevance and modify search strategies if necessary)
	<ul style="list-style-type: none"> • Select an appropriate search engine to find information related to a topic • Develop strategies for finding information (using different keywords, cross-checking with other websites, referring to other sources such as books, people etc.) • Consider the effectiveness of search results and refine where necessary • Discuss issues of copyright and downloading material (e.g. MP3s, images, videos etc.) • Develop skills to question where web content might originate from and understand that this gives clues to its authenticity and reliability (by looking at the web address, author, linked pages etc.) • Skim and select information, checking for bias and different points of view • Check plausibility of information by using a variety of sources on the same topic • Appropriately reference sources used in work
Information Handling	<ul style="list-style-type: none"> • Collect appropriate data, enter it into a database and use the database to answer simple questions and provide information • Raise questions of the data and translate them into search criteria • Change the contents of cells in a spreadsheet to explore 'what if' questions • Use a spreadsheet to record data and produce graphs
	<ul style="list-style-type: none"> • Generate and compare different charts and graphs and understand that different graphs are used for different purposes • Create and use a branching database to organise and sort data to answer questions • Use a spreadsheet to explore simple patterns (e.g. in a number square) • Determine the data needed to answer a specific question; organise, present, analyse and interpret the data in tables, diagrams, tally charts, pictograms and bar charts – using IT where appropriate • Begin to develop skills to identify clearly what data needs to be collected and design a questionnaire or use an input device (e.g. data logger) to aid its collection

Computing Key Skills KS2

	<ul style="list-style-type: none"> • Design questions using key words, to search a large pre-prepared database • Use complex searches (and/or, is greater/less than) to search data when looking for relationships and patterns in data • Modify a search pattern in order to find specific information • Check for accuracy by checking data, using different views, search tools and graphing. Identify and correct inaccuracies • Solve complex enquiries involving selecting, processing and presenting data; drawing conclusions from the process (e.g. is there a relationship between mini beast habitats and diets?) • Construct, refine and interpret frequency tables; bar charts with grouped, discrete data; line graphs and interpret pie charts <hr/> <ul style="list-style-type: none"> • Enter labels and numbers into a spreadsheet • Information Handling Enter formulae into a spreadsheet and modify the data (simple calculations x, +, -) • Make predictions and changes and check results • Use 'SUM' to calculate the total of a set of numbers in a range of cells • Change data and formulae in a spreadsheet to answer 'what if...' questions and check predictions • Identify and enter the correct formulae into cells, modify the data, make predictions of changes and test them • Use more advanced formulae (sum, average, mode etc.) • Copy formulae to create tables of results. • Use a spreadsheet to draw graphs to help answer specific problems • Use information from the analysis of data to present findings in another application
<p>Understand Computer Networks, the Internet and Provision of Multiple Services</p>	<ul style="list-style-type: none"> • Log into the school network using own username and password • Locate own folder on a particular drive to save and retrieve work • Select either colour or black and white printing. Switch display <hr/> <ul style="list-style-type: none"> • Able to explain that the computers in the classroom are part of a school network: connected by wires (or wirelessly) to a main computer called the server; other devices such as printers, projectors and visualisers; draw or label a diagram to show this. • Able to explain that the server is connected to the Internet which is made up of a global network and is able to communicate with other servers to share resources and data. Draw or label a diagram to show this. • Able to explain what the school's monitoring software does and why it has been installed <hr/> <ul style="list-style-type: none"> • Use a range of internet search technologies efficiently • Search using appropriate keywords and search syntax • Search for files or emails using relevant search techniques • Use a range of search terms in different search engines to find the most appropriate results • Use a range of media services across the internet such as emails, voice calls, video conferencing and streaming media with guidance and as appropriate to the needs of the wider curriculum • Exchange information both internally and externally, taking care that communications are appropriate in terms of tone and

Computing Key Skills KS2

	<p>content</p> <ul style="list-style-type: none">• Be able to critically evaluate search results and identify factors which affect ranking
--	--