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| **Information Technology** | |
| **Programme of Study** | |
| * Use technology purposefully to create, organise, store, manipulate and retrieve digital content. | |
| **Skills** | **Knowledge and Understanding** |
| **Create, Manage and Manipulate Digital Content** | **Create, Manage and Manipulate Digital Content** |
| **Text and images** | **Text and images** |
| On a range of devices:   * Develop correct use of the keyboard (e.g. spacebar, backspace, delete, shift (not caps lock) and enter keys). * Add captions to photos and graphics. * Select text appropriately e.g. highlighting or clicking text to select. * Make simple changes to text e.g. colour, style and size. * Select text from word lists (if necessary). * Select appropriate images to add to work. * Word process short texts directly onto the computer (i.e. do not just copy up handwritten work). * Navigate round text in a variety of ways e.g. mouse, arrow keys, touch, when editing work. * Save and store work in an appropriate area, and be able to print, retrieve and amend it. * Use a range of digital devices to capture and save both still and moving images. These could include digital cameras, video cameras, tablets, * Refine the use of shape, line and colour to communicate a specific idea or artistic style/effect through various tools including brushes, pens, lines, flood fill, spray and stamps. * Talk about their use of graphics package and their choice of tools. * Begin to make changes to images e.g. cropping using basic tools in image manipulation software. * Upload images or video from cameras and other digital devices to a computer, or into a document, with support if needed. * Create a sequence of images to form a short animation. * Change the content of a project for a specific audience. * Begin to add different forms of media together e.g. text and images in blogs or word processing documents. * Organise and name files appropriately and accurately. | * Know that text can be different colours, sizes and styles and that these can easily be changed. * Know that technology can be used to communicate ideas in different ways, e.g. text, images, tables and sound. * Understand there are a variety of tools in graphics packages, each fulfilling a different purpose. * Know that there are various ways of capturing still and moving images. * Know the importance of giving an appropriate name to files. * Know that files can be stored in folders and how the structure of the directory is ordered. * Understand that files can be retrieved from their location and edited. * Know what the term multimedia means. * Understand the differences between a graphics package and paper based art activities. * Know that there are various ways of capturing still and moving images. * Understand the need to frame an image or scene and keep the camera still. * Understand that animation is a sequence of still images. * Know how to take images appropriately and responsibly. * Understand how the mood of a piece can easily be changed through use of text, graphics and sound. * Begin to understand that images, sounds and text can be subject to copyright. * Start to understand that content needs to be changed according to the audience. * Understand the importance that files need to be Organised and named files appropriately and accurately. |

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| **Sound** | **Sound** |
| * Explore a range of electronic music and sound devices and software. * Be able to listen to and to select a sound from a bank of pre-recorded sounds. * Use sound recorders, both at and away from the computer, to record and playback sounds e.g. voices, instruments, environmental sounds. * Use software to explore and create sound and musical phrases for a purpose. * Use basic editing tools to change recorded sounds (speed up, slow down, reverse, echo) to alter the mood or atmosphere * Use recorded sound files in other software applications. * Be able to save sound files. * Be able to share recordings with a known audience. | * Understand that most devices have stop, record and playback functions. * Be aware that sound can be recorded and stored on the computer as a sound file. |
| **Data handling** | **Data handling** |
| * Develop classification skills by carrying out sorting activities * Use simple graphing software to produce pictograms and other basic tables, charts or graphs. * Use graphing software to enter data and change a graph type, e.g. pictogram to bar chart. * Interpret the graphs, discuss the information contained and answer simple questions. * Sort and classify a group of items by asking simple yes / no questions. This may take place away from the computer, e.g. a ‘Guess Who’ game. * Use a branching database program to sort and identify items. * Use basic search tools in a prepared database to answer simple questions e.g. how many children have brown hair? | * Understand that IT can be used to sort items and information. * Understand that IT can be used to create and display charts graphs. * Develop an understanding of what datalogging can be used for (Science). * Understand that IT can be used to add to and change charts and graphs quite easily. * Begin to understand that unless data has been entered accurately it cannot be used to provide correct answers to questions. |
| **Digital research – searching** | **Digital research – searching** |
| * Locate specific, teacher defined, age appropriate websites through a favourites menu and /or by typing a website address (URL) into the address bar in a web browser. * Use technology to source, generate and amend ideas e.g. searching a resource such as Espresso for images by a specific artist. * Talk about their use of technology and other ways of finding information, e.g. books, asking other people. * Use and explore appropriate buttons, arrows, menus and hyperlinks to navigate teacher selected web sites, and other sources of stored information. * Use key words to search a specific resource for information, e.g. Espresso and other websites, under the guidance and supervision of an adult. * Be able to retrieve files from a computer using a search of the computer. | * Begin to understand that some websites are more useful than others when searching for topics. * Understand that technology can give rapid access to a wide variety of information and resources, including internet, TV, DVDs * Understand that there are different ways of finding information, e.g. books, asking other people * Understand that different forms of information, e.g. text, images, sound, multimedia exist and that some are more useful for specific purposes than others. * Understand that files can be retrieved and found on a computer using a search of the computer. * Understand and discuss how information can be obtained and used to answer specific questions. * Understand a website has a unique address and the need for precision when typing it. * Begin to understand that not everything on the internet is true. * Be aware that they can be accidently diverted from websites through a link to a new website, advertising or pop-ups. |

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| **Digital Literacy** | |
| **Programme of Study** | |
| * 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. | |
| **Skills** | **Knowledge and Understanding** |
| **Online safety** | **Online safety** |
| * Use technology safely. * Keep personal information safe. * Use technology respectfully. * Recognise situations involving content and contact that are not safe, (e.g. In emails, text messages, videos) and know where to go for help. * Minimise screen, turn off the monitor, or use back buttons to return to the home page if anything inappropriate appears on the screen. | * Know what it means to use technology safely. * Understand what is meant by personal information. * Understand how to keep personal information safe online. * Know the rules for keeping safe online. * Understand that personal information, e.g. email address, usernames, passwords, home address or telephone number should not be shared, either online or offline, without a trusted adult’s permission. * Know that they should not ask to meet anybody from the online world in the offline world. * Know and abide by the school’s rules for keeping safe online (age appropriate). * Understand that technology should be used respectfully. * Know where to go for help and support when they have concerns about content they have seen on the internet or other technologies. * Know where to go for help and support when they have concerns about contact on the internet or other technologies. |
|  | **Uses of technology** |
|  | * Recognise common uses of information technology beyond school. |
| **Electronic communication** | **Electronic communication** |
| * Contribute ideas to class and group emails. * Send an email, using a subject heading, to a known member of the school community e.g. another class teacher, bursar. * Open and reply to an email from a known person. * Contribute to a blog, journal or forum on the school’s VLE. * Develop an awareness of appropriate language to use in email and other forms of digital communication such as blogs. * Begin to use webcams and /or video conferencing as a class, if appropriate and available, with external providers, another class or school. * Talk openly about their use of online communication in school and at home. | * Understand that messages can quickly be sent electronically, via a range of devices, over distances and that people can reply to them. * Understand that an email has to be sent to a unique email address and the need for accuracy in typing the address. * Understand that electronic messages can be in the form of pictures, sound and/or text. * Understand that some emails may be malicious or inappropriate and begin to recognise when an attachment may be unsafe to open. * Understand the different ways that messages can be sent e.g. email, text messages, letter, phone, forums and begin to consider the advantages, or appropriateness, each one. |

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| **Computer Science** | |
| **Programme of Study** | |
| * 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. | |
| **Skills** | **Knowledge and Understanding** |
| **Programming** | **Programming** |
| * Give and follow commands (one at a time) to navigate other children and programmable toys around a course or a familiar journey, including straight and turning movements. * Plan, generate and follow a sequence of instructions (actual and on-screen) to make something happen; or complete a given task or problem to create a simple program. * Explore and create sequences of commands/instructions in a variety of programs/devices. * Make predictions and describe the effects when creating programs and controlling devices. * Identify errors in instructions. * Use logical reasoning to predict what will happen in simple programs. | * Understand that algorithms are a series of steps or instructions to achieve a specific goal. * Understand that devices respond to commands. * Understand the meaning of the term program. * Talk about devices in the home that are controlled by commands. * Understand that prediction, trial and error are important considerations when creating programs or controlling movement. * Understand that there are different ways to create or produce a sequence of commands, including verbal, recorded, graphical, pressing buttons and on screen methods. * Understand what debugging is and begin to understand that you can develop strategies to help find bugs. * Understand what logical reasoning is and how it can be used to predict what happens in simple programs. |
| **Simulations and modeling** | **Simulations and modeling** |
| * Explore simulations of real and virtual environments e.g. BBC science clips, virtual plants and pets. * Make informed choices when exploring what happens in a simulation. * Discuss use of simulations and compare with reality, e.g. a simulation of a science experiment. * Talk about the rules found in simulations. | * Understand that computer simulations can represent real and virtual environments. * Understand that computer simulations allow the user to explore options and make choices, recognising that different decisions produce different outcomes. |