Key Learning in Computing: Years 1 and 2

Computing

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**

Skills	Knowledge and Understanding
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.

Key Learning in Computing: Years 1 and 2

Sound	Sound
▪ Explore a range of electronic music and sound devices and software.	▪ Understand that most devices have stop, record and playback functions.
▪ Be able to listen to and to select a sound from a bank of pre-recorded sounds.	▪ Be aware that sound can be recorded and stored on the computer as a sound file.
▪ 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.	

Data handling	Data handling
▪ Develop classification skills by carrying out sorting activities	▪ Understand that IT can be used to sort items and information.
▪ Use simple graphing software to produce pictograms and other basic tables, charts or graphs.	▪ Understand that IT can be used to create and display charts graphs.
▪ Use graphing software to enter data and change a graph type, e.g. pictogram to bar chart.	▪ Develop an understanding of what datalogging can be used for (Science).
▪ Interpret the graphs, discuss the information contained and answer simple questions.	▪ Understand that IT can be used to add to and change charts and graphs quite easily.
▪ 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.	▪ Begin to understand that unless data has been entered accurately it cannot be used to provide correct answers to questions.
▪ 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?	

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.	▪ Begin to understand that some websites are more useful than others when searching for topics.
▪ Use technology to source, generate and amend ideas e.g. searching a resource such as Espresso for images by a specific artist.	▪ Understand that technology can give rapid access to a wide variety of information and resources, including internet, TV, DVDs
▪ Talk about their use of technology and other ways of finding information, e.g. books, asking other people.	▪ Understand that there are different 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.	▪ Understand that different forms of information, e.g. text, images, sound, multimedia exist and that some are more useful for specific purposes than others.
▪ Use key words to search a specific resource for information, e.g. Espresso and other websites, under the guidance and supervision of an adult.	▪ Understand that files can be retrieved and found on a computer using a search of the computer.
▪ Be able to retrieve files from 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.

Key Learning in Computing: Years 1 and 2

Computing

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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Key Learning in Computing: Years 1 and 2

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.