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.

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.

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.	▪ Know what it means to use technology safely.
▪ Keep personal information safe.	▪ Understand what is meant by personal information.
▪ Use technology respectfully.	▪ Understand how to keep personal information safe online.
▪ Recognise situations involving content and contact that are not safe, (e.g. In emails, text messages, videos) and know where to go for help.	▪ Know the rules for keeping safe online.
▪ Minimise screen, turn off the monitor, or use back buttons to return to the home page if anything inappropriate appears on the screen.	▪ 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.	▪ Understand that messages can quickly be sent electronically, via a range of devices, over distances and that people can reply to them.
▪ Send an email, using a subject heading, to a known member of the school community e.g. another class teacher, bursar.	▪ Understand that an email has to be sent to a unique email address and the need for accuracy in typing the address.
▪ Open and reply to an email from a known person.	▪ Understand that electronic messages can be in the form of pictures, sound and/or text.
▪ Contribute to a blog, journal or forum on the school's VLE.	▪ Understand that some emails may be malicious or inappropriate and begin to recognise when an attachment may be unsafe to open.
▪ Develop an awareness of appropriate language to use in email and other forms of digital communication such as blogs.	▪ 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.
▪ 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.	

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.

Possible Cross-curricular links, especially opportunities for English, Mathematics and Computing within teaching:	
English links	• Writing descriptions of people (science link)
Mathematics links	• Shapes
Computing links	•
Other links	• Art – Paintings by Matisse and Mondrian

Possible Experiences including visits/visitors/other:
Consider what could augment your planning to really enthuse the children in your class: •

Display/Resources:
Consider what resources could be brought into the classroom and what display work could be completed either before/during or after topic is taught:

Session	Key Objective from skills listed above (What is it that you want the children to learn?)	Possible Activities including use of Computing and other technologies, and showing at least 3 differentiations	Outcomes/Evidence of what they have learnt (Where will this be found? Will it be in a book? Topic book? Display? Photographic evidence?)	Possible extension into homework if appropriate to enhance and deepen learning
1	• Develop correct use of the keyboard (e.g. spacebar, backspace, delete, shift (not caps lock) and enter keys) • Select text appropriately e.g. highlighting or clicking text to select and make simple changes to text e.g. colour, style and size • 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	Teach the children to turn on and log on to their own computer. Open Microsoft word. Children type in a word (Barrow / Walney / dog / cat / fish etc) or short sentence to familiarise themselves with the keyboard keys. Practise deleting, adding spaces, making capital letters, changing font, enter key to move down the page etc. Show the children how to use the mouse and arrow keys to edit and highlight work. LA – work with a more able partner MA- HA – Type words changing font/colour/using capitals etc.	Children will be able to insert and edit / manipulate text. Evidence will be in folders on the server.	Create a Word document at home on a topic of their own choice.

	• Save and store work in an appropriate area, and be able to print, retrieve and amend it			
2	• Develop correct use of the keyboard (e.g. spacebar, backspace, delete, shift (not caps lock) and enter keys) • Select text appropriately e.g. highlighting or clicking text to select and make simple changes to text e.g. colour, style and size • 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	Review work from the previous lesson LA-Children open a document with words in eg 'green', 'big', 'small' and alter the text colour / font / size accordingly. MA-Children type in a list of words such as 'green', 'big', 'small', 'grow', shrink' etc and alter the text accordingly. HA-Children practise changing the text of a few initial words – eg.'green', 'big', 'small' then add a few of their own choice -eg. Ghost (using an appropriate font) or 'round' (changing the shape of the text) etc.	Children will be able to insert and edit / manipulate text. Evidence will be in folders on the server and in topic books.	
3	• 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	Recap on last week's lesson and skills learned. Use graphics package like 2Paint or Dazzle or Paint (or all 3) on the computer (no save option on 2Paint). Demonstrate to the children how to use various tools and the different effects we can create eg drawing shapes, changing line thickness, changing colour, fill a shape with colour, spray, use stamps etc. HA, MA, LA -Set the children a challenge to make a picture of linked to one of this half term topics (eg Railway, local landmarks, stories with familiar settings) using as many of the tools as they can. (Differentiation by outcome). Save your work to the server.	Children will have learned how to use the tools in a graphics package to create a picture. Evidence will be in folders on the server and in topic books	

| 4 | • 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 | Use Microsoft word
Recap on the word processing skills we learned in lesson 1.

All children practise typing their name and copy it then paste it 3 times below and alter each one using the skills we learned previously (eg font / colour / size / capital letters etc. Explain to your partner how you changed each one using appropriate computer language and terminology.

Demonstrate how to insert shapes and lines etc, change their colour, fill them with colour, rotate them, copy and paste, delete etc and allow the children time to experiment freely. Show the children how to add text to a shape and drag and drop to move a shape around.

Look at pictures such as 'The Snail' by Henri Matise

A picture by Mondrain
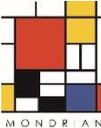
LA & MA & HA- use word to recreate your chosen picture / make a similar picture in the style of the artist. (Differentiation by outcome).

Save your work on the server.

Together look at each other's pictures on the IWB and discuss how the children created certain effects. Discuss each picture, what we like about it and how it could be changed / improved.

LA & MA & HA -Give the children time to experiment and make their own pictures using shapes (eg a train / person / tree etc using the techniques they have learned. | Children will have learned how to make a picture using word

Evidence will be in folders on the server and in topic books. | |

5	• Save and store work in an appropriate area, and be able to print, retrieve and amend it • 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 tool	Look at Chas Jacob's picture of Heysham Village (Seaside town) LA & MA & HA-Try to recreate it / make a similar picture of Walney Channel in Chas' style using both a graphics package (eg Paint or Dazzle). (Differentiation by outcome). Discuss the pros and cons of each type of package Which do you prefer / is easiest to use? Which gives the best result?	Children will have compared creating a picture using both Microsoft Word and a graphics package to see which is easier / more appropriate. Evidence will be in folders on the server.	
6	• Develop correct use of the keyboard (e.g. spacebar, backspace, delete, shift (not caps lock) and enter keys) • Select appropriate images to add to work and add captions to photos and graphics • Select text appropriately e.g. highlighting or clicking text to select and make simple changes to text e.g. colour, style and size • 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 • Upload images or video from cameras and other digital devices to a computer, or into a document, with support if needed	Science link Children take photograhs of a friend and add sentences to describe appearance Create a document using 1 + description. Alter the text according to taste (font / colour / size etc). LA – with support add short sentences using a word bank. Change font and size MA – add photo and write short sentences using a word bank HA – upload photo and write sentences changing font /size/colour. Save your work on the server. Together look at each other's work on the IWB and discuss what we like about it and how it could be changed / improved.	Children will have learned how to begin to make a document about a science topic using both text and photos. Evidence will be on the server in folders and in topic books	