Progression of Skills- Computing (Cross referenced with Lancashire KLIPs)

		Computer Science			Information Technology	Digital Literacy	
EYFS		• Children recognise that a range of technology is used in places such as homes and schools. • They select and use technology for particular purposes.				• Children talk about ways to keep healthy and safe.	
Y1	NC Statement	**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.**
	Lancashire KLIPS	Knowledge & Understanding (Programming): ▪ 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.	Skills (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.	Simulations & Modelling: ▪ 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.	==TEXT & IMAGES== (Skills) *Create, manage & manipulate digital content.* 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. 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	Recognise common uses of information technology beyond school. Talk openly about their use of online communication in school and at home	Skills: ▪ Use technology safely. ▪ Keep personal information safe. ▪ Use technology respectfully. Online Safety: ▪ 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. ==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

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.

<mark>Knowledge & Understanding:</mark>

- 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.

<mark>SOUND:</mark>

- Explore a range of electronic

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.
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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

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.

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.		
	Outcome	Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that an algorithm written for a computer is called a program.	Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The wrong sandwich in Purple Mash and can write their own simple algorithm, e.g. colouring in a bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the code, e.g. bubbles activity in 2Code	When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2GoChallenges2Go challenges will end up at the end of the program.	Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2quiz example (sorting shapes), 2code design mode (manipulating backgrounds) or using pictogram software such as 2count.	Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair.	Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash.

		Computer Science			Information Technology	Digital Literacy	
Y2	**NC Statement**	**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.**
	Lancashire KLIPS	Knowledge & Understanding (Programming): ▪ 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	Skills (Programming): ▪ Identify errors in instructions.	Skills (Programming): ▪ Make predictions and describe the effects when creating programs and controlling devices. ▪ Use logical reasoning to predict what will happen in simple programs. Simulations & Modelling: ▪ 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.	<mark>TEXT & IMAGES</mark> (Skills) *Create, manage & manipulate digital content.* On a range of devices: -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. -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. <mark>Knowledge & Understanding:</mark> ▪ Understand the differences	Recognise common uses of information technology beyond school. 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	Skills: ▪ 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. Online Safety: ▪ 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. <mark style="background-color:#00ff00">Electronic communication:</mark> ▪ 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

		strategies to help find bugs. ▪ Understand what logical reasoning is and how it can be used to predict what happens in simple programs.			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: ▪ 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: -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.		malicious or inappropriate and begin to recognise when an attachment may be unsafe to open.

					▪ 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. <mark>Digital Research- searching:</mark> ▪ 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		

		Computer Science				Information Technology		Digital Literacy
					new website, advertising or pop-ups.			
	Outcome	Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms so that they can be successfully converted into code	Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps.	Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.	Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs.		Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.
		Computer Science				**Information Technology**		**Digital Literacy**
Y3	NC Statement	**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 concern about content and contact.**
	Lancashire KLIPS	Programme of Study: ▪ Work with various forms of input and output. ▪ Design and create programs	Simulations & Modelling: ▪ Explore the effects of changing variables in models and simulations, asking 'What if?' questions.	Simulations & Modelling: ▪ Make and test predictions. ▪ Use a pre-prepared spreadsheet to record data to answer questions and produce graphs.		Programme of study: ▪ Use search technologies effectively. Digital Research-searching:	Programme of study: ▪ Use and combine a variety of software to accomplish given goals. ▪ Collect and present information. ▪ Design and create content	Programme of Study: ▪ Use technology responsibly. ▪ Identify a range of ways to report concerns about contact. ▪ Identify a range of ways to report concerns about content. Online Safety (Skills): ▪ Use technology responsibly.

that accomplish specific goals. **Programming (Skills):** Write programs that accomplish specific goals. Read what a sequence in a program does. Work with various forms of input. Work with various forms of output. Use logical reasoning to predict outputs. Design programs, showing skills needed to plan and implement a task/problem that accomplish specific goals. Design programs showing appropriate planning and implementing skills. Create programs that implement algorithms to achieve specific goals. **Programming (knowledge & Understanding):** Understand how to plan and write programs that accomplish specific goals. Know a range of input devices and how they can be used.		Use a pre-prepared spreadsheet to explore simple number patterns, e.g. multiples. Change the contents of cells in a pre-prepared spreadsheet and explore the consequences.		Use a range of child friendly search engines to locate different media, e.g. text, images or sound. Evaluate different search engines and explain their choices in using these for different ▢purposes. Develop specific key questions and key words to search for information e.g., a question such as 'Where could we go on holiday?' would become a search for 'holiday destinations'. Consider the effectiveness of key questions on search results and refine where necessary. Use strategies to verify the accuracy and reliability of information, distinguishing between fact and opinion, e.g. cross checking with different websites or books. Use appropriate tools to save and retrieve accessed information, e.g. through the use of favourites, history,	<mark>Text & Images (skills):</mark> *Design, create, manage and manipulate digital content. Use different font sizes, colours and effects to communicate meaning for a given audience. Use various layouts, formatting, graphics and illustrations for different purposes or audiences. Use various software tools to complete a project, problem or task. Use page setup to select different page sizes and orientations. Use cut, copy and paste to refine and re-order content. Combine and use various software tools to complete a project, problem or task. Use appropriate editing tools to ensure their work is clear and error free, e.g. spell checker, thesaurus, find and replace. Select and import sounds from other sources, e.g. own recordings, sound effects and music. <mark>Knowledge & Understanding:</mark> Recognise the features of good page design and multimedia presentations. Consider how design features meet the needs of the audience e.g. poster, news paper, menu, instructions. Understand that some tasks and problems require a variety of	To create appropriate passwords. Keep passwords and personal data safe. Recognise acceptable behaviour. Online Safety (Knowledge & Understanding): Know how to use technology responsibly. Understand that online actions can impact on other people. Understand the need to keep personal information and passwords private in order to protect themselves when communicating online. Know how to respond if asked for personal details or in the event of receiving unpleasant communications, e.g. saving the message and showing to a trusted adult –according to the school's eSafety policies and procedures /AUP. Understand the risks posed by the internet relating to contact e.g. bullying, grooming. Know a range of ways to report concerns about contact. Understand the risks posed by the internet relating to content e.g. violent and biased websites. Know a range of ways to report concerns about content. Understand the school's acceptable use policy. <mark style="background:#7CFC00">Electronic Communication:</mark> Use a range of digital tools to communicate, e.g. contributing to chats and/or discussion forums, in school's VLE, blog or text messages, making purposeful contributions to respond to another pupil's question or comment. Investigate the different styles of language, layout and format of different electronic communications and how these vary depending on the audience. Continue to use webcams and /or video conferencing as a class, if appropriate and available, e.g. with external providers, another class or school, or abroad as part of a wider topic. Begin to publish their work to a wider audience, e.g. using VLE or podcasting tools. **Example - email** Log on to an email account, open emails, create and send appropriate replies. Forward an e-mail. Save an e-mail in draft format and then return and edit prior to sending.

		• Know a range of output devices and how they can be used. • Know the difference between an input and an output. • Understand that computers can collect data from various inputs. • Know what debugging is and how it can be used to achieve specific goals. • Understand that planning is a vital part of designing programs.				copy/paste and save as. • Identify and cancel unwanted advertising, pop-ups and potentially malicious downloads by using the task manager function and NOT through buttons on the pop-up window, or the cross in the right hand corner. • Know how to temporarily allow useful pop-ups from a website. • Develop use of more advanced searching techniques, e.g., searching for a phrase using quotation marks to locate precise information. Choose the most appropriate search engine for a task, e.g., image search, search within a specific site or searching the wider internet.	software tools to accomplish them. • Understands what is meant by Internet services. • Understand that evaluation and improvement are vital parts of the design process and that ICT allows changes to be made quickly and efficiently. • Demonstrate this through editing their work. • Has an awareness of Internet services. Images, videos & animation- graphics (drawing & painting): • Acquire, store and retrieve images from cameras, scanners and the internet for a purpose. • Select specific areas of an image, copy and paste to make repeating patterns. • Be able to resize various elements in a graphics or paint package. Images, videos & aminations- digital photographs, videos & animations: • Use a range of devices to capture still and moving images for a purpose. These could include digital cameras, video cameras, iPads, microscopes and webcams. • Discuss and evaluate the quality of their own and others' captured images and make decisions whether to keep, delete or change them.	• Attach different files to emails, e.g. text document, sound file or image. • Open and save attachments to an appropriate place. • Select an email recipient from a class address book.

						• Independently download and save images and video onto a computer. • Independently upload images and movies from digital cameras and other devices to a computer and save in a relevant location. • Be able to 'resize' images (pixels, resolution, aspect ratio and dimensions). • Be able to use basic tools in a software package to change images according to purpose. • Import music, stills or video into video editing software for a specific project. • Arrange, trim and cut clips to create a short film that conveys meaning. • Add simple titles, credits and special effects, e.g transitions. • Storyboard, then use captured images to create a short animated sequence which communicates a specific idea. Sound: • Use a variety of devices and software to select, playback and record voice and other sounds. • Locate and use sound files from online sources, e.g. Audio Networks, and other multimedia resources. • Select, import and edit existing sound files in sound editing software, e.g., Audacity. • Use editing tools to refine and improve outcomes and performances.	

						Use recorded sound files in other software applications. Be able to share sound recordings with a wider audience. Data Handling: Create frequency diagrams and graphs to answer questions. Create and use a branching database to organise and analyse information to answer questions. Begin to identify what data should be collected to answer a specific question. Collect data and enter it into a database under appropriate field headings. Use a database to answer straightforward questions by searching, matching and ordering the contents of a single field. Based on the data collected, children should raise their own questions and translate them into search criteria that can be used to find answers to specific questions. Compare different charts and graphs, e.g., in tables, frequency diagrams, pictograms, bar charts, databases or spreadsheets and understand that different ones are used for different purposes. Select and use the most appropriate method to organise and present data. Use dataloggers to capture, record and analyse data continuously	

		Computer Science				Information Technology		Digital Literacy
						over time, including sound, temperature and light. (Science) ▪ Use a data logger to 'snap shot' a series of related but separate readings in the course of an appropriate investigation. (Science)		
	Outcome	Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it.	Children demonstrate the ability to design and code a program that follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. Children understand how variables can be used to store information while a program is executing.	Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They make good attempts to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. traffic light algorithm in 2Code . In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately	Children can list a range of ways that the internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email . They can describe appropriate email conventions when communicating in this way	Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine such as Purple Mash search or internet-wide search engines.	Children can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph . Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. 2Respond .	Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact.
		Computer Science				**Information Technology**		**Digital Literacy**
Y4	NC Statement	**Design, write and debug programs that accomplish specific goals, including controlling or**	**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**	**Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in**	**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**	**Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.**

		simulating physical systems; solve problems by decomposing them into smaller parts.				**offer for communication and collaboration.**	**evaluating digital content.**	**that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.**	

| | Programme of study: ▪Control or simulate physical systems. Programming (Skills): ▪Debug programs that accomplish specific goals through self and peer assessment. ▪Use sequence, repetition and selection in programs. ▪Plan, test and evaluate programs that solve specific problems using a screen turtle or other programmable devices. ▪Use sequences of commands to control physical devices using outputs. ▪Demonstrate and develop a sense of audience when appropriate. ▪Use and debug programs to control physical devices Note real or screen | Simulations & Modelling: ▪Understand that changes made to one element of a spreadsheet can impact on other calculations | Programme of Study: ▪Use logical reasoning to detect and correct errors in programs. ▪Use sequence, repetition* and selection* in programs (*next to a phrase or word e.g. **repetition** denotes a progression within that concept.) | Simulations & Modelling: ▪Understand how computer simulations can represent real or imaginary situations and how these can help in the wider world. ▪Understand how computer simulations and spreadsheet models allow changes to be made quickly and easily in comparison with real life situations. | Programme of study: ▪Use search technologies effectively. <mark>Digital Research-searching:</mark> ▪Talk about and describe the process of finding specific information, noting any difficulties during the process and how these were overcome ▪Understand that information found as a result of a search can vary in relevance. ▪Begin to recognise that anyone can author on the internet and sometimes web content is inaccurate or even offensive. ▪Understand that provision is made in schools to filter ▪Begin to understand the concept of copyright, e.g. what images, videos or sounds are legal and safe | Programme of study: ▪Collect and present data. ▪Use and combine internet services. ▪Analyse and evaluate information. <mark>Text & Images (skills):</mark> ▪*Design, create, manage and manipulate digital content. ▪Select and import graphics from digital cameras, graphics packages and other sources and prepare for use, e.g. cropping, resizing and editing. ▪Use and combine internet services such as those that provide images, sounds, 3D representations and graphic software. ▪Recognise and use key layout and design features, e.g., text boxes, columns and borders. ▪Insert and edit simple tables. ▪Create a range of hyperlinks and produce a non-linear, interactive presentation. ▪Recognise intended audience and suggest improvements to make their work more relevant to that audience. Through self and peer assessment, analyse and evaluate presentations | Programme of study: ▪Recognise acceptable/unacceptable behaviour. ▪Understand the opportunities computer networks offer for communication. Online Safety (Skills): ▪Recognise unacceptable behaviour. ▪Be able to create a 'secure' password, e.g. combination of letters, symbols and numbers in accordance with the school's eSafety policies and procedures /AUP. ▪Know what to do and who to tell if they discover something inappropriate or offensive on a website, at home and in school. Online Safety (Knowledge & Understanding): ▪Understand what acceptable online behaviour is. ▪Understand what unacceptable online behaviour is. ▪Recognise that cyber bullying is unacceptable and will be sanctioned according to the school's eSafety policies and procedures /AUP. ▪Know how to report an incident of cyber bullying if and when it occurs, according to the school's eSafety policies and procedures /AUP. ▪Understand the risks involved in arranging to meet and subsequently meeting anybody from the online world in the offline world. ▪Know what images are suitable to include in an online profile and ensure that appropriate permissions have been obtained, e.g. copyright or asking friends before uploading their images. ▪Understand the need for certain rules of conduct particularly when using live forms of communication, e.g. chats and forums in the school's VLE, taking turns to speak when video conferencing. ▪Know the school's rules for keeping safe online and be able to apply these beyond school. <mark>Electronic Communication:</mark> ▪Understand that computer networks can be used for communication. |
| Lancashire KLIPS | | | | | | | |

		simulations could be used. ▪ Use logical reasoning to detect and correct errors in programs. Programming (Knowledge & Understanding): ▪ Understand that evaluation is a vital part of the design process. ▪ Understand what the terms sequence, repetition and selection mean and know how to use them in programs. ▪ Understand how to control physical devices. ▪ Be aware that everyday devices use sensors and outputs, e.g. automatic doors, traffic lights, intruder alarms. ▪ Understand how to use logical reasoning to detect errors in programs. ▪ Understand how to use logical reasoning to correct errors in programs. ▪ Understand that computers can collect data from various inputs.				to use in their own work. ▪ Begin to understand the need to acknowledge sources of information. ▪ Understand when and where the internet can be used as a research tool. Know that Boolean search 'operators' can effect web searches.	and projects so that suitable improvements can be added to work. ==Knowledge & Understanding:== ▪ Recognise the features of good page design and multimedia presentations. ▪ Consider how design features meet the needs of the audience e.g. poster, news paper, menu, instructions. ▪ Understand that some tasks and problems require a variety of software tools to accomplish them. ▪ Understands what is meant by Internet services. ▪ Understand that evaluation and improvement are vital parts of the design process and that ICT allows changes to be made quickly and efficiently. ▪ Demonstrate this through editing their work. ▪ Has an awareness of Internet services. **Images, videos & animation- graphics (drawing & painting):** ▪ Use various tools in paint packages or photomanipulation software to edit/change an image, e.g. applying different special effects. ▪ Use the 'print screen' function to capture images. ▪ Explore the use of graphics and paint packages to design and plan an idea.	▪ Understand the opportunities computer networks offer for communication. ▪ Know a range of ways that computer networks can be used for communication. ▪ Understand that some emails and other forms of electronic communications may be malicious or inappropriate and recognise when an attachment may be unsafe to open. ▪ Recognise the effect that content in their communications may have on others. ▪ Respect the ideas and communications of others they encounter online. ▪ Discuss the differences between online communication tools used in school and those used internet content, recognising this is possibly not the case on computers used at home at home, e.g., those 'blocked' through the school's filtering.

						Images, videos & aminations- digital photographs, videos & animations: ▪ Understand that a digital image can be captured from different devices and it can be stored and developed. ▪ Begin to understand how images from different sources (stills, video, graphics, animation) are used to enhance a presentation or communicate an idea. ▪ Begin to understand the meaning of 'resizing' i.e. the differences between pixel size, resolution and image dimensions and the need to maintain aspect ratios. ▪ Understand that planning is a vital part of the design process. ▪ Understand that evaluation and improvement are vital parts of the design process and ICT allows changes to be made quickly and efficiently. ▪ Understand the need for caution when using the Internet to search for images and what to do if they find unsuitable images (See school's Acceptable Use Policy/AUP). ▪ Know how to take images appropriately and responsibly (See school's Acceptable Use Policy/AUP). ▪ Understand that copyright exists on most digital images and video about the impact of	

choices and decisions in their work.
- Understand that images, sounds and text can be subject to copyright and abide by copyright rules when creating a presentation.

Sound:
- Use music software to experiment with capturing, repeating and sequencing sound patterns.
- Use ICT to create and perform sounds or music that would otherwise not be possible in a live situation, e.g., editing a multi-part piece.
- Talk about software which allows the creation and manipulation of sound and music. Understand that many types of sounds can be combined in editing software.
- Understand how sound can be used in multimodal texts to create meaning and provide effects.
- Understand that copyright exists on most recorded music.

Data Handling:
- Understand that there are different types of data.
- Understand the need to structure information properly in a database.
- Know, understand and use the vocabulary: file, record, field, sort and search.
- Recognise similarities and differences between ICT

						and paper-based systems.	
						▪ Talk about the advantages of using IT to sort, interrogate and classify information quickly.	
						▪ Understand that effective yes / no questions are key to organising data efficiently in a branching database.	
						▪ Understand that there are different types of data, e.g. numeric, alphabetic, date, alphanumeric.	
						▪ Know that ICT can enable the creation of a variety of tables and graphs for different purposes.	
						▪ Understand some graphs and charts are more appropriate and easier to read than others.	
						▪ Begin to make choices about how to present data to solve a specific problem.	
						▪ Understand that dataloggers can be used to sense external and physical changes and subsequently collect data in a range of simple investigations. (Science)	
						▪ Understand that data can be collected more efficiently by a datalogging device compared with manual methods. (Science) Know that datalogging devices can be pre-programmed to collect data for a given time and on different triggers and remotely for a long period of time. (Science).	

	Outcome	When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. Children make more intuitive attempts to debug their own programs.	Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They understand 'if statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. Children can make use of user inputs and outputs such as 'print to screen'. e.g. 2Code.	Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'if' statements, repetition and variables. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. e.g. traffic light algorithm in 2Code. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately	Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.	Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level. .	Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software such as 2Connect and 2Publish+. Children share digital content within their community, i.e. using Virtual Display Boards .	Children can explore key concepts relating to online safety using concept mapping such as 2Connect. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact.
		Computer Science				**Information Technology**		**Digital Literacy**
Y5	**NC Statement**	**Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing**	**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**	**Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.**

	Lancashire KLIPS	Simulations & Modelling/IT Data Handling:	Programming (Skills):	Programming (Skills):	Digital Research- search:	Digital Research- searching:	Design, create, manage and manipulate digital content (skills)	Online Safety (skills):

Simulations & Modelling/IT Data Handling:

- Explore the effects of changing variables in models and simulations in order to solve a problem.
- Make and test predictions.
- Enter formulae into a pre-prepared spreadsheet - explore the effects of changing variables.
- Develop simple spreadsheet models to investigate a real life problem.
- Create simple spreadsheet models to investigate a real life problem.
- Identify and enter the correct formulae into cells.
- Make predictions of the outcome of changing variables.

Programming (Skills):
- Use repetition* and selection* in programs.
- Use variables* in programs.
- Design and create programs using decomposition.
- Design programs to accomplish specific tasks or goals.

Programming (knowledge & understanding):
- Know the meaning of the key terms:
  - selection.
  - variables.
  - decomposition.
- Know the meaning of logical reasoning.
- Understand what a procedure is and why it is important in programs.
- Know that programs can be represented in different formats including written and diagrammatic.

Programming (Skills):
- Use logical reasoning to develop systematic strategies that can be used to debug algorithms and programs.

Digital Research- search:
- Understand how search engines work and know that there are different search engines; some to search within sites, and some to search the wider Internet.

Understand Computer Networks:
- Understand the difference between the internet and the world wide web.
- Understand that the Internet provides many different services.

Digital Research- searching:
- Choose to use the internet when appropriate as a tool for independent research, e.g., gathering text, images, videos and sound as resources to use in their own work.
- Use more advanced searching techniques (e.g. Boolean and relational operators).
- Choose the most appropriate search engine for a task, e.g., image search, search within a specific site or searching the wider internet.
- Be able to create and use folders within lists of book-marks or favourites to organise content.
- Apply their knowledge of what to do and who to tell if they discover something inappropriate or offensive on a website, at home and in school.

Design, create, manage and manipulate digital content (skills)
- Select, use and combine internet services to create digital 'content' (inc. programs and systems).
- Demonstrate awareness of intended audience in work.
- Independently select the most appropriate ICT tools for intended purpose and audience.

Design, create, manage and manipulate digital content (knowledge & understanding)
- Understand the importance of content and editing to produce digital content for specific audiences.

TEXT & IMAGES (Skills)
.
- Select suitable text, sounds and graphics from other electronic sources, and import into own work.
- Create an outline plan for a non-linear presentation; producing a diagram to demonstrate understanding how pages link and the need for clarity.
- Develop the use of hyperlinks to produce more effective, interactive, non-linear presentations.

Online Safety (skills):
- Locate and respond appropriately to the terms and conditions on websites.
- Identify unsuitable posts (e.g. on blogs, a forum …) pertaining to content and conduct.
- Identify inappropriate and unacceptable behaviour when analysing resources such as videos, text-based scenarios and electronic communications.

Online Safety (knowledge & understanding):
- Be aware that file sharing is usually illegal due to copyright laws and can also spread viruses.
- Know a range of ways to report concerns about content and contact.
- Know what a 'strong' password / understand the importance of keeping personal data secure.
- Understand what a digital footprint is.
- Know that resources and materials can be covered by copyright and downloading these materials is illegal.
- Understand that web users have to observe the terms and conditions of websites.
- Understand that electronic communication can be malicious or inappropriate and recognise when an attachment may be unsafe to open.
- Understand that social network or other online environments have security settings, which can be altered, to protect the user.
- Understand the need to respect privacy of other individuals, e.g., through using bcc function on an email, not uploading/using images or personal information without permission.
- Understand the benefits of developing a 'nickname' for online use where appropriate.

Electronic Communication and collaboration:

- Independently, and with regard for eSafety, select and use appropriate communication tools to solve problems by collaborating and communicating with others within and beyond school, e.g., email, discussion forums, blogs, wikis, text messages and other digital communication tools.
- Make use of webcams and /or video conferencing, if appropriate and available, e.g., to exchange ideas and collaborate on projects

						• Use of hyperlinks to produce more effective, interactive, non-linear presentations. • Develop consistency across a document - same style of font, colour, body text size, etc. • Develop and use criteria to evaluate design and layout of a range of resources including web sites, pages on VLE, online resources and presentations. Evaluate design and layout of a range of resources including web sites, pages on VLE, online resources and presentations <mark>TEXT & IMAGES (knowledge & understanding)</mark> • Understand the importance of evaluation and adaptation of individual features to enhance an overall presentation. • Understand the potential of multimedia to inform or persuade and know how to integrate words, images and sounds imaginatively for different audiences and purposes. • Recognise the features of good design in different printed and electronic texts, (e.g. a poster, website, presentation). Talk about design in the context of own work. • Understand that images, sounds and text can be subject to copyright and abide by copyright rules	with external providers, another class or school, or abroad. • Extend online publishing to a more global audience, e.g. creating and publishing web pages, blog and podcasting. • Evaluate the effectiveness of a variety of digital communication tools for communicating and collaborating. Example- e-mail • Add e-mail addresses to a class address book. • Create group or distribution lists of contacts from an address book. • Learn how to use the cc and bcc facilities when sending an e-mail and discuss when these should be used. • Send 'group' e-mails and be aware of the benefits and risks in 'replying to all' Digital Research- search: • Use strategies to verify the accuracy and reliability of information, distinguishing between fact and opinion, e.g. cross checking with different websites or books. • Identify whether a file has copyright restrictions and can be legally downloaded from the internet then used in their own work. • Use appropriate strategies for finding, critically evaluating, validating and verifying information, e.g., using different keywords, skim-reading to check relevance of information, cross checking with different websites or other non ICT resources. • Distinguish between fact and opinion and make informed choices about the sources of online information used to inform their work. • Apply their knowledge of the meaning of domain names and common website extensions, e.g., .co.uk, .com, .ac, .sch .org, .gov, .net, to support the validation process. • Develop skills to question where web content might originate from and understand that this gives clues to its authenticity and reliability, e.g., by looking at web address, author, contact us sections, linked pages. • Use acquired search skills to question where web content might originate from and understand that this gives clues to its authenticity and reliability, e.g., by looking at web address, author, contact us sections, linked pages. • Identify how copyright restrictions can affect

							Know that images (still and moving) can be used to enhance presentations or communicate ideas. **Understand** the differences between object based graphics packages and paint packages. Sound: **Independently** select and use a variety of devices to record musical and non-musical sounds. **Independently** select, edit, manipulate and combine sound files from a range of sources to create a composition which could be broadcast for a specific purpose and audience, e.g. a soundbyte or podcast. **Upload** and download projects to other devices and online space e.g. VLE, blog or website, collaborating and communicating with audiences in locations beyond school. Data Handling: **Construct,** refine and interpret bar charts, scatter graphs, line graphs and pie charts. **Discuss** how IT enables you to search and sift through large amounts of different types of information and describe the advantages of using the tools **Design** questions and perform complex searches using key words, to search a large pre-prepared database looking for relationships	how a file can be used in their own work, e.g., those produced under Creative Commons Licensing.

						and patterns, e.g. data on the Internet; census data. ▪ Check the reliability of the data; identify and correct inaccuracies. ▪ Solve complex enquiries involving selecting, processing and presenting data; drawing conclusions, e.g. is there a relationship between minibeast habitat and diet? ▪ Design a data capture form, e.g. a questionnaire or table to collect information to answer a specific question. ▪ Search data according to more than one criterion. ▪ Present data to a specified audience and display findings in other software, e.g. through presentation software. ▪ Compare different charts and graphs, e.g., in tables, frequency diagrams, pictograms, bar charts, databases or spreadsheets and understand that different ones are used for different purposes. ▪ Select and use the most appropriate method to organise present, analyse and interpret data. ▪ Use a datalogger's settings to log data over a chosen time span (Science)	
	Outcome	Children may attempt to turn more complex real-life situations into algorithms for	Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs	When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the	Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal information is and can explain how this can be	Children search with greater complexity for digital content when using a search engine. They are able to explain in	Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the	Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online services. Children implicitly relate appropriate online behaviour to their right to personal

		Computer Science				Information Technology		Digital Literacy
		a program by deconstructing it into manageable parts. Children are able to test and debug their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code.	show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design.	use of tabs to organise code and the naming of variables.	kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content, e.g. 2Blog, 2Email, Display Boards	some detail how credible a webpage is and the information it contains.	solution. e.g. creating their own program to meet a design brief using 2Code. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software such as collaborative mode. They are able to use several ways of sharing digital content, i.e. 2Blog, 2Email and Display Boards	privacy and mental wellbeing of themselves and others.
Y6	NC Statement	**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 concern about content and contact.**

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Simulations & Modelling/IT Data Handling: ▪ Understand when and where it is appropriate to use a spreadsheet model or a simulation to support an investigation and explain their choices. ▪ Understand that spreadsheets can automate functions, making it easier to test variables, e.g. when planning a budget you can change the number of items and see the changes to total cost. ▪ Understand that spreadsheets can be used to explore mathematical models. ▪ Understand the need for accuracy and frequent checking when entering formulae. ▪ Understand the possible consequences of using inaccurate data or formulae.	**Programming (Skills):** ▪ Use procedures in programs.. ▪ Design, test and refine programs to control robots or floor turtles taking account of purpose and needs. ▪ Use programming software to create simulations.	**Programming (knowledge & understanding):** ▪ Understand the need for precision when creating sequences to ensure reliability. ▪ Understand how experiences of programming / control relate to control systems in the real world. ▪ Understand that there are often different ways to solve the same problem or task ▪ Understand that programming software can create simple and complex simulations.	**Digital Research- search:** ▪ Understand what 'ranking' is when related to search engines ▪ Understand the importance of keywords and 'linked' pages in the listing/ranking of websites. **Understand Computer Networks:** ▪ Know about the key components of a network and how networks work. ▪ Understand what an IP (Internet Protocol) address is.	<mark>Digital Research-searching:</mark> ▪ Know and understand what to do and who to tell if they discover something inappropriate or offensive on a website, at home and in school. ▪ Understand when and where the internet can be used as a research tool. ▪ Understand that you should not publish other peoples' material on the Internet without their permission but you can hyperlink to their websites and acknowledge the source. ▪ Know how Boolean and relational operators can be used in searching. ▪ Understand that good online research involves processing information, and interpreting it for others rather than direct copying	<mark>Design, create, manage and manipulate digital content (skills)</mark> ▪ Routinely evaluate and improve work as part of the design process. ▪ Use a range of digital devices to produce digital 'content'. <mark>Design, create, manage and manipulate digital content (knowledge & understanding)</mark> ▪ Understand that many different devices can be used in isolation and sometimes together to produce digital 'content'. ▪ Understand that you can convert between different formats of files. <mark>TEXT & IMAGES (Skills)</mark> ▪ Make effective use of transitions and animations in presentations. Consider their appropriateness and overall effect on the audience. Independently select, process and import images, video and sounds from a variety of sources to enhance work. ▪ Format and edit work to improve clarity and purpose using a range of tools, e.g. cut and paste, justify, tabs, insert and replace. ▪ Through peer and self assessment, evaluate presentations and make improvements. ▪ Make use of transitions and special effects in video editing software, understanding the effect on the audience.	**Online Safety (skills):** ▪ Continue to develop the skills to identify risks involved with contact, content and their own conduct whilst online. ▪ Use electronic communication and collaboration tools safely. **Online Safety (knowledge & understanding):** ▪ Understand they have a right to be protected from inappropriate use of technology by others and the need to respect the rights of other users. ▪ Understand some malicious adults may use various techniques on the Internet to make contact, elicit personal information and 'groom' young children, e.g., fake profiles. ▪ Understand the risks involved in arranging to meet and subsequently meeting anybody from the online world in the offline world. ▪ Know that they should tell a trusted adult immediately if they are asked to meet anybody from the online world in the offline world. ▪ Know how to report any suspicions, e.g., through school's eSafety policies and procedures and the use of CEOP's 'report abuse' button, which links directly to the police. ▪ Recognise that cyber bullying is unacceptable and will be sanctioned according to the school's eSafety policies and procedures /AUP. ▪ Know how to report an incident of cyber bullying if and when it occurs, according to the school's eSafety policies and procedures /AUP. ▪ Understand that they should not publish other peoples' pictures/tag them without permission. ▪ Know that content, e.g., photographs and videos, put online are very difficult to remove ▪ Understand how their own inappropriate conduct can put them at risk whilst online **Electronic Communication and collaboration:** ▪ Understand the potential benefits and risks of digital communication and that methods will vary according to purpose. ▪ Understanding of which tools are better for communicating or collaborating and those that can be used both. ▪ Understand what open-source software is and the conditions of use when using it. **Digital Research- search:** ▪ Understand when and where the internet can be used as a research tool.

							Export images, presentations and movies in formats appropriate for the purpose and use them in multimedia presentations. Plan and create a short animated sequence to communicate a specific idea, using a storyboard and timeline. Design and create a short animated sequence. ==TEXT & IMAGES (knowledge & understanding)== Be aware when it is more appropriate to use an object based graphics package or a paint package. Discuss and evaluate own and others' images and movies, refining for given audience or task. Understand that computers can save digital images, graphics and movies in many different file formats and that some are better suited to certain purposes than others. Understand the need for caution when using the Internet to search for images and what to do if unsuitable images are found. Know how to take images appropriately and responsibly Understand the implications of copyright and apply this to work. Know how to select suitable software tools to accomplish specific goals and tasks	Understand how search engines work and know that there are different search engines; some to search within sites, and some to search the wider Internet. Be aware that copying text directly from websites or non-digital resources is equivalent to stealing other people's work (plagiarism). Understand the concept of copyright and how it applies to material they find/download and to their own work. Understand the concept of plagiarism and the importance of acknowledging and referencing sources. Understand that you should not publish other peoples' material on the Internet without their permission but you can hyperlink to their websites. ᴏ Become aware that file sharing is usually illegal due to copyright laws and can also spread viruses. ᴏ Talk about validity, plausibility and appropriateness of information, especially on the internet. ᴏ Understand some of the potential dangers and impact of not validating information. Understand that good online research involves processing information, and interpreting it for others rather than direct copying.

Sound:
- Create their own sounds and compositions to add to presentations, animations and films.
- Use ICT to produce music or sound effects for a specific purpose, considering the impact on the audience, e.g. length, style, genre.
- Be aware of different sound file formats, e.g., MP3, WAV; save and use appropriately.
- Know when it is appropriate to use sound/music to communicate with an audience.

Data Handling:
- Use a range of sensors including in a variety of situations in the course of scientific investigations. (Science)
- Use a datalogger to make and record accurate measurements or observations and produce graphical information to answer questions and solve simple problems. (Science)
- Be able to design experiments which require use of dataloggers, recognising what measurements will be needed, how many repeats and the most appropriate means of recording data. (Science)
- Recognise the need for accuracy when designing, entering and interrogating data and how this will affect the

							quality of information gained. ▪ Recognise the consequences of using inaccurate data and relate to the outside world, e.g. police, doctors, banks, school databases. . ▪ Understand which searches and graph types are relevant to a specific problem and types of information. ▪ Understand that there are different types of data, e.g., numeric, alphabetic, date, alphanumeric, currency. ▪ Understand the importance of presentation techniques aimed at a specific audience. ▪ Understand the need for data protection and some of the rights of individuals over stored data and how it affects use and storage of data in the real world. ▪ Know when to choose dataloggers as the most appropriate tool for capturing data for a particular purpose and explain /justify their choices. (Science) ▪ Appreciate that use of technology can bring added accuracy to results but also that occasional anomalies may need moderation and further investigation. (Science)	
	Outcome	Children are able to turn a more complex programming	Children translate algorithms that include sequence, selection and repetition into code and their own	Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a	Children understand and can explain in some depth the difference between the internet and the World Wide Web. Children know what a	Children readily apply filters when searching for digital content. They are able	Children make clear connections to the audience when designing and creating digital content. The children design and	Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking, e.g. 2Respond activities. They

		task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem.	designs show that they are thinking of how to accomplish the set task in code utilising such structures, including nesting structures within each other. Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions.	complex algorithm together to explain the program as a whole.	WAN and LAN are and can describe how they access the internet in school.	to explain in detail how credible a webpage is and the information it contains. They compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communcatio n.	create their own blogs to become a content creator on the internet, e.g. 2Blog. They are able to use criteria to evaluate the quality of digital solutions and are able to identify improvements, making some refinements.	recognise the value in preserving their privacy when online for their own and other people's safety.

The progression of skills overview – is used in conjunction with the long-term planner which outlines the skills and knowledge. This supports staff with differentiation and gives clarity as to the expectation at each stage. When planning staff need to ensure that over the two years these skills are addressed and secured by the children. They need to ensure that the tasks planned have full coverage of the skills over the 6-week block and that skills are built upon and progressive