Year 1

Information Technology	
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. ▪ 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. ▪ Create a sequence of images to form a short animation. ▪ Begin to add different forms of media together e.g. text and images in blogs or word processing documents.	▪ 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 that files can be stored in folders. ▪ Understand that files can be retrieved from their location and edited. ▪ 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 ▪ Begin to understand that images, sounds and text can be subject to copyright.
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. ▪ 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.	▪ 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.

▪Be able to retrieve files from a computer using a search of the computer.	▪Understand and discuss how information can be obtained and used to answer specific questions. ▪Understand a website has a unique address and the need for precision when typing it. ▪Begin to understand that not everything on the internet is true. ▪Be aware that they can be accidentally diverted from websites through a link to a new website, advertising or pop-ups.
Digital Literacy	
Online Safety	
▪Use technology safely. ▪Keep personal information safe. ▪Use technology respectfully. ▪Recognise situations involving content and contact that are not safe, (e.g. In emails, text messages, videos) and know where to go for help. ▪Minimise screen, turn off the monitor, or use back buttons to return to the home page if anything inappropriate appears on the screen.	▪Know what it means to use technology safely. ▪Understand what is meant by personal information. ▪Understand how to keep personal information safe online. ▪Know the rules for keeping safe online. ▪Understand that personal information, e.g. email address, usernames, passwords, home address or telephone number should not be shared, either online or offline, without a trusted adult's permission. ▪Know that they should not ask to meet anybody from the online world in the offline world. ▪Know and abide by the school's rules for keeping safe online (age appropriate). ▪Understand that technology should be used respectfully. ▪Know where to go for help and support when they have concerns about content they have seen on the internet or other technologies. ▪Know where to go for help and support when they have concerns about contact on the internet or other technologies.
Computer Science	
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.	▪Understand that algorithms are a series of steps or instructions to achieve a specific goal. ▪Understand that devices respond to commands. ▪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

▪ Identify errors in instructions. Debug. ▪ Use logical reasoning to predict what will happen in simple programs.	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 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. ▪ 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.

Year 2

Information Technology	
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. ▪ 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. ▪ Begin to make changes to images e.g. cropping using basic tools in image manipulation software. ▪ 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. ▪ 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. ▪ Understand that files can be retrieved from their location and edited. ▪ Understand the differences between a graphics package and paper-based art activities. ▪ 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. ▪ 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.
Sound	
▪ Explore electronic music and sound 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	▪ 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.

down, reverse, echo) to alter the mood or atmosphere. ▪ Use recorded sound files in other software applications.	
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 software can be used to sort items and information. ▪ Understand that software can be used to create and display charts graphs. ▪ Understand that software 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.
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. ▪ 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. DK 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 accidentally diverted from websites through a link to a new website, advertising or pop-ups.
Digital Literacy	
Online Safety	
▪ Use technology safely.	▪ Know what it means to use technology safely.

▪Keep personal information safe. ▪Use technology respectfully. ▪Recognise situations involving content and contact that are not safe, (e.g. In emails, text messages, videos) and know where to go for help. ▪Minimise screen, turn off the monitor, or use back buttons to return to the home page if anything inappropriate appears on the screen.	▪Understand what is meant by personal information. ▪Understand how to keep personal information safe online. ▪Know the rules for keeping safe online. ▪Understand that personal information, e.g. email address, usernames, passwords, home address or telephone number should not be shared, either online or offline, without a trusted adult's permission. ▪Know that they should not ask to meet anybody from the online world in the offline world. ▪Know and abide by the school's rules for keeping safe online (age appropriate). ▪Understand that technology should be used respectfully. ▪Know where to go for help and support when they have concerns about content they have seen on the internet or other technologies. ▪Know where to go for help and support when they have concerns about contact on the internet or other technologies.
Computer Science	
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. Debug. ▪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.

Year 3

Information Technology	
Text and Images	
▪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. ▪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 and projects so that suitable improvements can be added to work.	▪Recognise the features of good page design and multimedia presentations. ▪Consider how design features meet the needs of the audience e.g. poster, newspaper, 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. ▪Recognise that IT can automate manual processes e.g. find and replace and understand the advantages and disadvantages of this. ▪Compare and contrast the impact of using different sounds, words and images from a variety of electronic sources. ▪Develop an increasing sense of audience and talk. ▪Understand that images, 3D representations, sounds and text can be subject to copyright and abide by copyright rules when creating a presentation. ▪Understand that presentations and projects need to be analysed and evaluated and suitable changes suggested to improve it. ▪Understand that internet services such as those that provide images, sounds, 3D representations and graphic software can be used to achieve specific goals and tasks.
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.	▪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.

▪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 over time, including sound, temperature and light. (Science) ▪Use a data logger to 'snapshot' a series of related but separate readings in the course of an appropriate investigation. (Science)	▪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).
Searching	
▪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 **o**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, copy/paste and save as.	▪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 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

▪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.	
Digital Literacy	
Online Safety	
▪Use technology responsibly. ▪To create appropriate passwords. ▪Keep passwords and personal data safe. ▪Recognise acceptable behaviour. ▪Recognise unacceptable behaviour. ▪Be able to create a 'secure' password, e.g. combination of letters, symbols and numbers in accordance with the school's online safety 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.	▪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 online safety 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. ▪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 online safety policies and procedures. ▪Know how to report an incident of cyber bullying if and when it occurs, according to the school's online safety policies and procedures. ▪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.
Electronic Communication	
▪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. ▪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.	▪Understand that computer networks can be used for communication. ▪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.
Computer Science	
Programming	
▪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.	▪Understand how to plan and write programs that accomplish specific goals. ▪Know a range of input devices and how they can be used. ▪Know a range of output devices and how they can be used. ▪Know the difference between an input and an output.

▪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. ▪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 could be used. ▪Use logical reasoning to detect and correct errors in programs.	▪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. ▪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.
Simulations and Modelling	
▪Explore the effects of changing variables in models and simulations, asking 'What if?' questions. ▪Make and test predictions. ▪Use a pre-prepared spreadsheet to record data to answer questions and produce graphs. ▪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.	▪Understand how computer simulations can represent real or imaginary situations and how these can help in the wider world. ▪Understand how computer simulations and spread-sheet models allow changes to be made quickly and easily in comparison with real life situations. ▪Understand that changes made to one element of a spreadsheet can impact on other calculations

Year 4

Information Technology	
Text and Images	
▪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. ▪Recognise and use key layout and design features, e.g., text boxes, columns and borders. ▪Recognise intended audience and suggest improvements to make their work more relevant to that audience. ▪Through self and peer assessment, analyse and evaluate presentations and projects so that suitable improvements can be added to work.	▪Recognise the features of good page design and multimedia presentations. ▪Consider how design features meet the needs of the audience e.g. poster, newspaper, menu, instructions. ▪Develop an increasing sense of audience and talk. ▪Understand that images, 3D representations, sounds and text can be subject to copyright and abide by copyright rules when creating a presentation.
Digital photographs, video and animation	
▪Storyboard, then use captured images to create a short, animated sequence which communicates a specific idea. ▪Discuss what makes a good, animated film or cartoon. ▪Learn how animations are created by hand. ▪Explore how devices can be used to create animations. ▪Be introduced to stop motion animation.	▪Learn about the importance of and use onion skinning.
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. ▪Create a melodic phrase. ▪Compose a digital piece of music.	▪Talk about software which allows the creation and manipulation of music. ▪Understand that copyright exists on most recorded music. ▪Understand and experiment with rhythm and tempo.
Data Handling	
▪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.	▪Understand that there are different types of data. ▪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.

▪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.	
Searching	
▪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 opurposes. ▪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, copy/paste and save as. ▪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.	▪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.
Digital Literacy	
Online Safety	
▪Use technology responsibly. ▪To create appropriate passwords. ▪Keep passwords and personal data safe. ▪Recognise acceptable behaviour. ▪Recognise unacceptable behaviour. ▪Be able to create a 'secure' password, e.g. combination of letters, symbols and numbers in accordance with the school's online safety 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.	▪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 online safety 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. ▪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 online safety policies and procedures. ▪Know how to report an incident of cyber bullying if and when it occurs, according to the school's online safety policies and procedures. ▪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.
Computer Science	
Programming	
▪Write programs that accomplish specific goals. ▪Read what a sequence in a program does. ▪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. ▪Debug programs that accomplish specific goals through self and peer assessment. ▪Plan, test and evaluate programs that solve specific problems using a screen turtle or other programmable devices. ▪Use logical reasoning to detect and correct errors in programs.	▪Understand how to plan and write programs that accomplish specific goals. ▪Know what debugging is and how it can be used to achieve specific goals. ▪Understand that planning is a vital part of designing programs. ▪Understand that evaluation is a vital part of the design process. ▪Understand how to use logical reasoning to detect errors in programs. ▪Understand how to use logical reasoning to correct errors in programs.
Simulations and Modelling	
▪Use a pre-prepared spreadsheet to record data to answer questions and produce graphs.	▪Understand how spread-sheet models allow changes to be made quickly and easily in comparison with real life situations.

▪ 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.	▪ Understand that changes made to one element of a spreadsheet can impact on other calculations

Year 5

Information Technology	
Design, create manage and manipulate digital content	
▪Select, use and combine internet services to create digital 'content' (inc. programs and systems). ▪Demonstrate awareness of intended audience in work. ▪Routinely evaluate and improve work as part of the design process. ▪Use a range of digital devices to produce digital 'content'.	▪Understand the importance of content and editing to produce digital content for specific audiences. ▪Understand that many different devices can be used in isolation and sometimes together to produce digital 'content'. ▪Know that you can convert between different formats of files.
Text and Images	
▪Develop and use criteria to evaluate design and layout of a range of resources including web sites, online resources and presentations. ▪Evaluate design and layout of a range of resources including web sites, pages on VLE, online resources and presentations. ▪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. ▪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. ▪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. ▪Plan and create a short, animated sequence to communicate a specific idea, using a storyboard and timeline. ▪Design and create a short, animated sequence.	▪Understand the importance of evaluation and adaptation of individual features to enhance an overall presentation. ▪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. ▪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. ▪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, refining for given audience or task. ▪Understand that computers can save digital images, graphics and movies in many different file formats. ▪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.

Sound	
▪Use a device to record musical and non-musical sounds. ▪Create their own sounds and compositions to add to presentations, animations and films. ▪Use software 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	
▪Construct, refine and interpret bar charts, scatter graphs, line graphs and pie charts. ▪Discuss how software 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. ▪Check the reliability of the data; identify and correct inaccuracies. ▪Design a data capture form, e.g. a questionnaire or table to collect information to answer a specific question. ▪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.	▪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.
Digital Literacy	
Online Safety	
▪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. ▪Continue to develop the skills to identify risks involved with contact, content and their own conduct whilst online.	▪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. ▪ 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 the need to report any suspicions to the website and possibly the police and fraud. ▪ Recognise that cyber bullying is unacceptable and will be sanctioned according to the school's online safety policies and procedures. ▪ Know how to report an incident of cyber bullying if and when it occurs, according to the school's online safety policies and procedures. ▪ Understand that they should not publish other peoples' pictures/tag them without permission. ▪ Know that content, e.g., photographs and videos put online can be very difficult to remove. ▪ Understand how their own inappropriate conduct can put them at risk whilst online

Searching	
▪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. ▪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 how a file can be used in their own work, e.g., those produced under Creative Commons Licensing.	▪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. ▪Become aware that file sharing is usually illegal due to copyright laws and can also spread viruses. ▪Talk about validity, plausibility and appropriateness of information, especially on the internet. ▪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.
Computer Science	
Programming	
▪Use repetition and selection in programs. ▪Use variables in programs. ▪Design programs to accomplish specific tasks or goals. ▪Use logical reasoning to develop systematic strategies that can be used to debug algorithms and programs. ▪Design, test and refine programs to control robots or floor turtles taking account of purpose and needs.	▪Know the meaning of logical reasoning. ▪Understand what a procedure is and why it is important in programs. ▪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.
Simulations and Modelling	
▪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.	▪Understand when and where it is appropriate to use a spreadsheet model 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

▪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.	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.
Understanding Computer Networks	
▪Understand the difference between the internet and the world wide web. ▪Understand that the Internet provides many different services. ▪Know about the key components of a network and how networks work. ▪Understand what an IP (Internet Protocol) address is.	

Year 6

Information Technology	
Text and Images	
▪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. ▪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. ▪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. ▪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. ▪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.	▪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 ▪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. ▪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.
Digital Literacy	
Online Safety	

▪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. ▪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.	▪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. ▪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 online safety 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 online safety policies and procedures /AUP. ▪Know how to report an incident of cyber bullying if and when it occurs, according to the school's online safety 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
Computer Science	
Programming	
▪Use repetition* and selection* in programs. ▪Use variables* in programs. ▪Design and create programs using decomposition. ▪Design programs to accomplish specific tasks or goals. ▪Use logical reasoning to develop systematic strategies that can be used to debug algorithms and programs. ▪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.	▪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. ▪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.
Simulations and Modelling	
▪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.	▪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.

▪ Identify and enter the correct formulae into cells. Make predictions of the outcome of changing variables.	▪ Understand the need for accuracy and frequent checking when entering formulae. ▪ Understand the possible consequences of using inaccurate data or formulae.