INSKIP ST. PETER'S C.E. PRIMARY SCHOOL
Learning, Loving and Living with Jesus

Keep your roots deep in Jesus Christ the Lord, build your lives on him
and always be thankful. *Colossians 2:7*

Compassion Friendship Respect Forgiveness Trust Thankfulness

Our **Computing** Progression Map

EYFS	• Online safety • Opportunities are provided across each area of the framework for the use of technology to solve problems and produce creative outcomes

	Years 1 and 2	**Years 3 and 4**	**Years 5 and 6**
Information Technology **- Create, manage and manipulate 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'. ▪Understand that you can convert between different formats of files.
-Text and images	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.	▪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.	▪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

	Understand there are a variety of tools in graphics packages, each fulfilling a different purpose. Know that there are various ways of capturing still and moving images. Know the importance of giving an appropriate name to files. Know that files can be stored in folders and how the structure of the directory is ordered. Understand that files can be retrieved from their location and edited. Know what the term multimedia means. Understand the differences between a graphics package and paper based art activities. Know that there are various ways of capturing still and moving images. Understand the need to frame an image or scene and keep the camera still.	▪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	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 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.	software can be used to achieve specific goals and tasks. ▪ 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	▪ Understand the implications of copyright and apply this to work. ▪ Know how to select suitable software tools to accomplish specific goals and tasks

		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	▪ 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	▪ 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.	▪ 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	▪ Understand that IT can be used to sort items and information. ▪ Understand that IT can be used to create and display charts graphs. ▪ Develop an understanding of what datalogging can be used for (Science). ▪ Understand that IT can be used to add to and change charts and graphs quite easily.	▪ 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.	▪ 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

	▪ Begin to understand that unless data has been entered accurately it cannot be used to provide correct answers to questions.	▪ 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. ▪ Understand that data can be collected more efficiently by a datalogging device compared with manual methods. 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.	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. ▪ Appreciate that use of technology can bring added accuracy to results but also that occasional anomalies may need moderation and further investigation.
-**Digital research - searching**	▪ 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	▪ 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.	▪ 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

	of information and resources, including internet, TV ▪ Understand that there are different ways of finding information, e.g. books, asking other people ▪ Understand that different forms of information, e.g. text, images, sound, multimedia exist and that some are more useful for specific purposes than others. ▪ Understand that files can be retrieved and found on a computer using a search of the computer. ▪ Understand and discuss how information can be obtained and used to answer specific questions. ▪ Understand a website has a unique address and the need for precision when typing it. ▪ Begin to understand that not everything on the internet is true. ▪ Be aware that they can be accidently diverted from websites through a link to a new website, advertising or pop-ups.	▪ 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	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

Digital Literacy - **Online Safety**	Recognise common uses of information technology beyond school. 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	▪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. ▪Understand what acceptable online behaviour is. ▪Understand what unacceptable online behaviour is.	▪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.

	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.	▪ 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.	▪ 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 eSafety policies and procedures ▪ 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**	Understand that messages can quickly be sent electronically, via a range of devices, over distances and that people can reply to them. Understand that an email has to be sent to a unique email address and the need for accuracy in typing the address. Understand that electronic messages can be in the form of pictures, sound and/or text. Understand that some emails may be malicious or inappropriate and begin to recognise when an attachment may be unsafe to open.	▪ Understand 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.	▪ 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.

	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.	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.	
- **Digital research**			▪ Understand when and where the internet can be used as a research tool. ▪ 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. ɒ Become aware that file sharing is usually illegal due to copyright laws and can also spread viruses.

			▪ ס Talk about validity, plausibility and appropriateness of information, especially on the internet. ▪ ס 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**	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	▪ 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. ▪ 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.	▪ 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.

	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.	▪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	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.	▪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	-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.
-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 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			▪ 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.