St Peter's Brafferton
C of E (VA) Primary School

Small school, big heart

Computing Progression of skills

The national curriculum for computing aims to ensure all pupils:

- can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation (Computer science)
- can analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems (Computer science)
- can evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems (Information technology)
- are responsible, competent, confident and creative users of information and communication technology. (Digital literacy)

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Progression in Online Safety (Linked to Knowlsley SOW)

Digital Literacy – Online Safety	EYFS	Year 1	Year 2/3 (A)	Year 2/3 (B)	Year 4/5 (A)	Year 4/5 (B)	Year 6
	The children learn: the Internet can be used to communicate with others. simple online safety rules. people create online content such as video and websites.	The children learn: how to access and search the web. to identify people they can trust and who they can ask for help when using the internet. to send a digital message. how they should behave and interact with others in the online world. why it is very important not to over share, share things that are personal or may hurt other people. the ways that some people can be unkind online. about following sensible online rules. safe behaviours in their day to day world such as not talking to or meeting strangers and how this applies in the online world. what a username and password is and that they must keep them private.	The children learn: about safe and unsuitable sites/apps. e.g. PEGI rating. to talk to a trusted adult before sharing personal information online and using strong passwords. that the characters and people they interact with may be computer generated / including games. the differences between the Internet and the physical world. sending a message and why it is important to communicate in a polite manner. that login details and passwords should only be shared with trusted adults. that copyright is something that prevents people stealing other people's work (content). what personal information is and that they need to talk	The children learn: the SMART rules about using the internet safely and responsibly. what personal information is and what they shouldn't be sharing. they should pause before posting and consider the potential consequences. who they should seek help from about online concerns. the correct and sensible choice when presented with hypothetical scenarios. how to send and reply to online messages, such as email, respectfully and understand the difference between online and face-toface. how to use the safety features of websites as well as reporting concerns to an adult they trust. what online bullying/ cyberbullying is and	The children learn: the potential risks and ways they can protect themselves and friends from harm online. the safety features of websites and apps. e.g. block or report. they should report concerns to a trusted adult. the Internet is a great place to develop rewarding relationships. not to reveal private information to a person they know only online. that friends/followers profiles may not reflect the truth about their real lives. the term 'digital footprint' and that the information they put online leaves a digital footprint or "trail" which can be positive and negative. to search for their own name and usernames in Google to test their digital footprint.	The children learn: to demonstrate and explain the importance of communicating kindly and respectfully. about the negative online behaviours such as bullying, trolling, griefing and harassment. about empathy and the effects of online bullying. anything they post online can be seen, reshared, re-used and may have a negative effect on others. about the 'Digital 5 a Day' plan and that they need to have a balanced approach to their use of technology. what makes a secure username and password. why people set up fake accounts or copy others identities.	The children learn: the advice they should/would give friends about making good choices online. the consequences of making poor online choices. E.g. Online bullying, Inappropriate comments (racially or sexually orientated), uploading inappropriate material (adult / illegal / antisocial), accessing inappropriate sites (anti-social or illegal behaviour / adult content) and breaching copyright laws. the way men and women can be stereotyped in movies and TV. when to seek help from a trusted adult and not to try and deal with online situations on their own. how to block and report inappropriate

		that online content such as video, images, websites and games are created and shared by people. that to use other peoples work without asking or giving credit is wrong.	to a trusted adult before sharing online. how some information may be inaccurate or untrue. to independently use a search engine, navigate a website, use favourites, bookmarks or typing the URL. that you can be connected to many	some of the forms it can take. how to report any concerns and who they consider a trusted adult. they need to have a balanced approach to their use of technology. to make good choices about how long they spend online.	how they should act appropriately & respectfully online. how to deal with online bullying. how photos can be altered digitally and the creative upsides of photo alteration, as well as its power to	what an online identity or internet persona is, e.g. social identity in online communities and websites (Facebook, Instagram, YouTube etc) including photos and posts. how to avoid being tricked by scammers online. E.g. Phishing emails. The child can explain why an app may be free but have in-apppurchasing and what that is.	comments or behaviour online. how to maintain healthy positive relationships with others while online. behaviours and strategies to prevent and stop online bullying. The child knows and can list the websites and agencies they can

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	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
KEY SKILLS	To know how to turn on the music centre and select music To be able to use a touchscreen to open and close apps	To use a mouse/touchpad to click and drag To be able to find the letters of my name on a keyboard	To know how to switch a range of digital devices (computer/laptops/chromebooks) on and off Load programs (office, apps.docs) with support/open and close apps Use a mouse pad to navigate an age-appropriate website/know how to navigate programmes Use a mouse pad to select/drag/position an object or window To talk about what they are doing with Computers/Digital Media using	To develop awareness of keyboard layout and use of a mouse e.g. use the mouse or arrow keys to insert words and sentences To know backspace/undo/shift for capital letters/enter/upload Changing font/ size/colour and style of text. typing skills (use two hands when typing) Logging on/off digital devices Use navigation skills to access appropriate parts of a website/ simple program/ app	To upload from digital devices and the Internet to a shared space (Class folders/ Children's Folder) To know that they can access their work from any school computer by logging on to their Folder/ Network Area. Open/ edit and save their work in own space To insert/cut/ copy/paste Use ctrl+v and ctrl+c to copy and paste To use 'save as' to create another version of their work	To use the online dictionary/thesaurus To use ctrl+alt+prntscrn to take a picture of the whole screen and paste it into paint to adapt it. Use windows snipping tool to capture and annotate work Continue to practice touch typing Use more than two fingers to type To develop further basic drafting and editing skills Edit and top copy literacy work using	To be able to use an online dictionary/thesaurus to search out level specific grammar and vocabulary independently To use a variety of techniques to save and annotate on screen projects (screenshots/snipping) To find, save, crop and edit images to suit needs of projects Continue to practice touch typing and use several fingers when typing Use spellchecker and grammar checker to ensure consistency throughout work	To continue to build on Yr5 key skills To select suitable software to edit and redraft written work Use a variety of keyboard shortcuts to improve efficiency on computing systems

			appropriate vocabulary according to equipment available e.g screen/keyboard/laptop/computer/mouse/headphones/chromebook		To develop further basic drafting skills: Insert words or sentences. Centre titles. Change font, font size, colour. To practice touch typing	Word/PPT/Publisher/ Slides/Docs Use spell checker/delete, insert and replace text using mouse or arrow keys		

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Computer Science	To make toys work using buttons/switches To follow a simple algorithm To put simple instructions in order to create a sequence of instructions	To plan a route for a friend or robot To be able to code a robot to go to a certain place To debug an algorithm or some code	To explore a range of control toys and digital devices (BeeBots/microphones/laptops/chromebooks) To follow instructions to move around to complete a simple task To give a sequence of instructions to complete a simple task (ScratchJR/Scratch) To record instructions simply using pictures To understand that instructions should be given clearly and in the correct order) To talk about what will happen when instructions are given in a sequence To navigate a sprite/BeeBot around a course (ScratchJR/Scratch)	Understand that programs use precise instructions to work Create simple programs and find bugs in them. Predict outcomes of their algorithms and programs To know how to control a range of digital devices To know that devices and actions on screen may be controlled by sequences of actions and instructions To create a sequence of instructions to complete a simple task (move a BBot/ create a simple shape) To control a floor robot using appropriate buttons (BeeBots) To make predictions about what will happen when a command is entered To discuss how to improve/change their sequence of commands.	To develop an understanding of how technology works and how computers process instructions and commands. To create/ edit and refine more complex sequences of instructions for a variety of programmable devices e.g. using the repeat command To use a computer to create basic applications, investigating how different variables can be changed and the effect this has To understand that computer simulations can represent real life situations. To use simulations to represent real life situations To navigate a programming app To control a character by dragging commands To write a simple program/create a simple animation	To understand that ICT allows for situations to be modelled which it would be impractical to try out in real life To investigate the effects of changing variables in these simulations To develop their understanding of how technology works and how computers process instructions and commands To create a program which can be controlled by external inputs (Scratch) e.g to program their character to navigate their 3D world with an input using control device To change algorithms/conditional statements and investigate the effect this has e.g use of 'if' and 'then'	To begin to develop understanding of how technology works; how computers process instructions and commands, including the use of coding languages. To experience a selection of coding environments (Scratch, Code.org, Micro:bit) To design their own game including sprites, backgrounds, scoring and/or timers. To use conditional statements to create unique algorithms Begin to understand the history of Computer Science Use variables to add variation to algorithms To program start and ends to games involving wins, losses and draws To create variable interaction in quizzes and games using a combination of selection, conditional statements and variables (Data blocks in scratch/microbit)	(Building on Yr5 work) To continue develop understanding of how technology works; how computers process instructions and commands, including the use of coding languages. To experience a variety of coding environments (Scratch, Code.org,Microbit) To show an understanding of the history of computing and computer science. To design their own game including sprites, backgrounds, scoring and/or timers. To use conditional statements to create unique algorithms Use variables to add variation to algorithms To program start and ends to games involving wins, losses and draws To create variable interaction in quizzes and games using a combination of selection, conditional statements and

				To know the purpose of a range of digital devices: laptops/cameras/computers To begin to answer 'What if' questions using a simulation (ScratchJr/Scratch to know the difference between input/output devices			To evaluate the effectiveness of their algorithms To continually debug code to identify and correct errors, exceptions and exploits	variables (Data blocks in scratch) To evaluate the effectiveness of their algorithms To continually debug code to identify and correct errors, exceptions and exploits
Information Technology	To be able to ask an adult to help me with technology To be able to take turns on a digital device	To talk about what might stop a device working To be able to talk about different digital devices	To use a digital device to take a picture or record their work (digital camera/ipad) To select or record a sound to add to their work (Scratch) To be familiar with a keyboard To select images on a computer/laptop To begin to type sentences (with support using capital letters, full stops and other punctuation To use a paint package to a create a picture (paint)	To develop basic editing skills e.g. shift key for uppercase, question marks, spaces after punctuation. To know how to improve the presentation of a piece of work by changing the font size, colour and style To use different layouts and templates for different purposes (e.g. story/newspaper /poster) To understand that folders are used to organise files on a computer To organise files and folders by creating,	To use still and digital cameras To know what makes a good photo (hold the camera steady/point at people's faces/to discuss the quality of their image and make decisions (e.g. delete a blurred / bad image) To download images and video To select suitable sounds (including recording with a microphone) To recognise and use key features of layout and design such as text boxes, columns, borders, WordArt Explore and begin to use more advanced	To evaluate a range of digital media, appropriate to task e.g websites To plan structure and layout of document/presentation To improve presentation of a document by laying it out effectively To select and import images from digital cameras and graphics packages Select and import sounds (eg own recording) and video/ visual effects Through peer assessment and self-evaluation,	To use presentation software and skills to present work or information relating to their learning. To evaluate a range of digital media, appropriate to task e.g website, prezi, blog, pdfs and recognise key features of layout and design and relate to other curriculum areas (Reading/Writing/Topic) To select software to support structure and layout of document/presentation To improve presentation of a document by considering its target audience To select and import graphics from digital	(Building on Yr5 work) Through peer assessment and self-evaluation, evaluate projects both during and after completion, and make suitable improvements To continue to produce and add to a portfolio of written and visual work and projects for sharing with other children inside and out of school To engage in a range of online activities including; publishing and sharing work for evaluation and evaluating the work of others.

			To use pre=defined layouts or templates for presentation To know other uses for ICT outside of school To discuss examples of other ICT uses.	renaming, moving, copying and deleting To combine graphics, text and sound to enhance their text (PPT/Word/Docs/Slides) To use a sound recording tool to record voice for a specific purpose (Scratch/PPT/Slides) To create a simple animation to illustrate a story or idea (Scratch/ScratchJr) To upload an image	features in a paint package, eg colour picker, colour replacer Save images and use them as part of other multimedia/ desktop publishing work To use music software to select/record/organise and reorganise sounds To locate, record, save and retrieve sounds to add sounds from different sources. Sequence still images and use simple editing techniques to create a presentation	evaluate work both during and after completion, and make suitable improvements To develop an increasing awareness of intended audience. To import a photograph and explore the effects which can be created To select areas and manipulate to give different effects. To capture video clips to communicate their ideas To cut and reorganise digital video To use a timeline to organise frames of video footage To add text, sound effects and other graphic effects To select from your best work to save and share (presentation, class folder) Ro use at least two online communication methods in topic	cameras, graphics packages and online sources To select and import sounds (eg own recording, free online sources) video/visual effects Through self-evaluation, evaluate projects both during and after completion, and make suitable improvements To develop projects with an awareness of intended audience To capture video clips to communicate ideas and information to specific audiences To edit, reorganise and enhance digital video for a specific purpose or audience To begin to produce a portfolio of written and visual work and projects for sharing with other children inside and out of school To use online communication methods to support topic work To consider language, layout and format when	

						work (blogs/emails etc.) To discuss advantages and disadvantages of these communication methods To start to think about the different styles of language layout and format of online communications sent to different people (eg. when it is appropriate to use "text language"). To begin to experience forms of online discussion: such as blogs, wikis, Start new threads and contribute to others relevant to the topic; consider relevance of contributions	communicating with different people online	
	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Digital Literacy	To be able to listen to and play digital stories	To be able to use technology to help me learn about the world	To know that we can communicate online (email/text) To contribute ideas to a class email or	To compare the different ways that messages can be sent e.g email/text /telephone/letter and start to consider their	To reply to an email independently To evaluate a range of printed and electronic texts, appropriate to task e.g newspaper, poster, webpage and	To open/read, and reply to email (independently) To collaborate to create a document, giving thought to its audience and	Use technology to present their work, showing an increasing degree of skill and using advanced software To use different filming techniques and camera	(Building on Yr5 work) Use technology to present their work, showing a degree of skill and using advanced software

		To ask questions about different digital devices and answer questions about what I am doing with a range of technology.	respond to a message To create a story to combine words, pictures, sounds and animations (ppt) Use simple writing tools to create their own content (office/purple mash) Follow age-appropriate links provided by the teacher to research information With support, use sound recording tools to convey a simple message To sort objects into groups according to the criteria	advantages and disadvantages To contribute and respond to an e-mail (with support from teacher) to look and talk about other people's contributions online (padlet/prezi/Scratch) To consider who can see their contributions on scratch/padlet To know that stories can be shared in different ways (photos/video/animation) To create/use own pictograms/graphs (purple mash) To create QR codes (goo.gl) To access websites and documents using QR codes To enter/save and retrieve pictures and text	recognise key features of layout and design To organise and present information for a specific audience To begin to experience forms of online discussion: such as blogs, wikis, quizzes, surveys and google hangouts To know that ICT enables access to a wider range of information and tools to help find specific information quickly Produce work using a computer, using more advanced features of programs and tools (font sizes) To work collaboratively to create documents, including presentations To understand the basic structure of a database To add data to a pre-made database To use the data in a pre-made database to generate graphs and charts	including links/images/embedded media (PPT) To understand that ICT allows us to make improvements to our work quickly and efficiently. To continue to use technology to create graphs and present data in different ways. To design and create a basic database To use a database to answer questions that have been constructed To enter data into a spreadsheet To change data and observe changes in results	angles e.g. zoom, panning, wide shot etc. to create different mood/perspective To plan a video or animation by drawing a storyboard (Storyboard It) To use a range of sound effects, music and voice-overs to create mood/ atmosphere To select and edit sounds, text, movie clips and other effects to suit purpose and audience Begin to recognise that the internet may contain material that is irrelevant, bias and inappropriate. Begin to understand how issues of copyright apply to their own work Begin to understand the different type of copyright pertaining to digital medias	To use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data Understand how issues of copyright apply to their own work Understand the different type of copyright pertaining to digital medias Recognise that the internet may contain material that is irrelevant, bias and inappropriate. Save and use pictures, text and sound recognising copyright issues

					To use technology to create graphs and charts To answer questions by searching and sorting the database.			