Mugginton CE ICT Skills Progression September 2021

		Y1	Y2	Y3	Y4	Y5	Y6
		Building understanding		**Expand understanding**		**Refine and manipulate**	
NC Aims		Understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation Analyse problems in computational terms, and have repeated practical experience of writing computer programs in order to solve such problems Evaluate and apply information technology, including new or unfamiliar technologies, analytically to solve problems Are responsible, competent, confident and creative users of information and communication technology.					
Computer Science	Know	Know what an algorithm is; how they are used as programs & that programs execute by following sequences of precise instructions		Know when a program needs to be debugged Understand key variables such as repetition, if, when, loop Understand that 'logical thinking' requires a systematic process of working sequentially		Understand techniques such as external triggers & infinite loops Understand how to use conditional statements Recognise when a program requires debugging	
	Skill	Create & debug simple programs Give Bee-bot commands: straight forward, backward, turn one at a time Give simple instructions to form geometric shape Use logical reasoning to predict behaviour of simple programs Discuss common uses of IT beyond school		Design, write & debug programs; solve problems by decomposing them in smaller parts Use sequence, selection & repetition in programs Use logical reasoning to explain how simple algorithms work & detect and correct errors in algorithms & programs Discuss importance of IT to the running of the wider world		Design, write & debug programs to accomplish specific goals, including controlling or simulating physical systems & solving problems by decomposing them into smaller parts Use sequence, selection & repetition; create & edit variables & various forms of input & output Use logical reasoning to explain how simple algorithms work & detect and correct errors in algorithms & programs	
ICT - Multimedia	Know	Understand that IT applications offer many ways to create and present ideas & information Understand that if work is not saved it is lost Spacebar, delete, arrow keys, return		Give a simple description of Augmented Reality Know PowerPoint is an effective way to present work on Interactive Whiteboard		Know how to use advanced features of PowerPoint to transition between slides, add moving graphics and sounds	
	Skill	Word process short texts to present Use software such as Audacity to record sounds With support change/manipulate recorded sounds Save work with increasing independence Use an IPad to take photos & record video With support, arrange clips to create a short film Save, open and print work, with support		Begin to type with greater speed, using two hands. Adjust font, size, styles & colours and align text left, right & centre Search for, store & combine images from IPads/Internet Resize, rotate, crop images using graphics program Copy & paste images from Google Images Use Software such as Storybird or 2Create to create a book/story Capture video, trim & arrange clips, add titles, credits, transitions & special effects (IMovie)		Type with increasing speed, accuracy & confidence using two hands Collect variety of audio, including own recordings & internet clips Create multi-track recording using effects. Edit & refine work to improve Plan multi-scene animation including characters, scenes, camera angles Use stop-go animation (Ican Animate/Hue) with external camera Publish animation, use movie editing package to refine Use 3D graphics package to create representation of existing building & design their own buildings. Change viewpoint angle, adjust style, colour	
Digital Literacy	Know	Children know that the Internet is a great place to develop relationships, communicate & learn but also learn to be cautious & ask for help if unsure Children begin to understand what personal information is and how it should be kept private Children know what to do if they are worried about something they see online		Develop understanding that not everything they read online is true Children understand the benefits & risks of the Internet. Know the importance of protecting their privacy Know the importance of using appropriate passwords & not sharing them with others. Understand that the Internet is a public space		Understand that not everything online is factually accurate. Appreciate importance of cross-referencing Know information & online communication is permanently available Understand the importance of being a good digital citizen – know how to report inappropriate material and prevent cyber-bullying Begin to understand impact of their online presence on their self-image – know how to construct a positive online profile	
	Skill	Children use technology safely & respectfully. With support, use the internet to learn more about the topic they are studying Pupils discuss the use of email, recognising that people send messages to each other using the Internet		Use an Internet Search Engine to find image, texts & learn more about a subject Navigate to a specific website, typing in a URL, not just search box Discuss the potential implications, positive & negative of sharing information online Log on to school email account, open, create & send email		Use all technology safely, respectfully and responsibility – using their knowledge of acceptable/unacceptable behaviour. Compare & contrast online acquaintances with real life friendships Log on to a school email account, open, create & send emails. Attach documents and update address book Learn dos & don'ts of copying & pasting information to avoid plagiarism Discuss the importance of effective filtering and monitoring tools	

Online Safety	Know	Know what devices can be used to search the Internet What counts as personal information That devices use the Internet to connect with each other	Appreciate the opportunities that mobile phones offer but also the health/wellbeing risks involved That online games (PSN, Xbox Live) are fun but carry risk – know what to do if they are exposed to inappropriate language etc The importance of password confidentiality	Know the importance of checking privacy settings to reduce risk, particularly on Apps such as TikTok, Snapchat Explain the CEOP button to parents How to respond to a range of scenarios focussed on cyber-bullying, sexting Dangers of viruses, scams, spam, junk email
	Skill	Make decisions about whether or not statements found on the Internet are always true or not Identify when inappropriate content is accessed and what to do (tell an adult) Consider other people's feelings on the internet	Question validity of what they see on the Internet Think before sending, comment on consequences of what you post – recognise online behaviours which are unfair Identify dangers when presented with E-Safety scenarios	Be a good online citizen and friend Judge what sort of Privacy settings are best for reducing different risks Use different sources to double-check information – appreciate websites such as Wikipedia are tremendous sources of information but not always reliable Find Report & Flag buttons on commonly used sites and apps Consider the way search results are selected & ranked
Handling Data	Know	Know that information can be presented in a number of ways How to follow a simple branch database and save/retrieve their work	Understand that data can be presented in tables, charts, graphs and spreadsheets Know how to enter simple formulae into a spreadsheet	Know which formula to use when spreadsheet model needs changing Children appreciate issues relating to data security in the real world (health, police) Understand the importance of accuracy when collecting & inputting data
	Skill	Interpret a simple pictogram Input data into a program Sort objects & pictures into lists or simple tables Make a simple Y/N tree diagram to sort information	Recognise which information is suitable for their topic Design a questionnaire to collect information Sort & organise information, input into a table or program Create and search a brankch database	Create data-collection forms & enter data accurately after collecting Create graphs and charts from spreadsheet calculations Children can interpret the data they have presented, looking for patterns/trends and identify when problems might have occurred
Vocabulary		Algorithm, instruction, order, debug, program, turn, left, right, clockwise, repeat, input, output	Debug, decompose, edit, logical sequence, flowchart, sprite, block, command, algorithm, answer, correct, error, instructions, commands, variable, network	Variable, loop, touch-type, conditional statement, simulate, viewpoint, adjust, fake news, bias, source, plagiarism, spreadsheet, insert, table
Resources & applications		Beebots, Kodable, Logo, Scratch Jnr, Kodu, Audacity	Scratch, Logo, PowerPoint, FlowGo, Kodu, 2Create, Storybird, Google Docs	Scratch, Logo, PowerPoint, FlowGo, Kodu, Rasperry Pi, Python, Thunkable, TikTok, Snapchat, Instagram