St Thomas Becket Catholic Primary Computing Strands Progression Map

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Computational Thinking	**Crazy Characters and Fruit Salad** - To understand that a set of instructions is called an algorithm. - Begin to know that algorithms need to be precise to work.	**Game designer** - To evaluate computer games by saying what is good and what they do not like about prepared games. - To suggest and make changes to games to improve them. - To change prepared games and say why they have made the changes. E.g. You get more points for healthier food. - To design and create own games which meet specific requirements. (Link to topic learning.)	**Finding bugs** - To read code and detect problems. - To make suggestions about how to fix the problem.	**Writing procedures** - To use repeat instructions to draw regular shapes on screen using commands. - To make turns specifying the degrees. - To give an onscreen turtle specific directions - To make accurate predictions about the outcome of a program. - To write procedures which combine several commands.	**Binary Code** - To understand that data in computers is stored and transmitted as a series of 0s and 1s. - To represent different numbers using binary code. - To understand that a 'bit' is one digit in binary and a group of 8 'bits' is called a byte.	**Design a moving toy** - To input a sequence of instructions to control external devices. - Refine procedures to improve desired outcomes. - Use sensors as inputs to trigger events. - Use simple control language to activate multiple devices or outputs concurrently - To design a simple toy that a microbit can sit inside of.
Programming	**Beebots** - To understand that devices respond to commands. - To begin to know	**Game Maker** - (Follows on from Computational Thinking. The	**We are programmers** - Create an algorithm for an animated scene	**Programming with animation and conditions** - To expand understanding	**Gamer Developing** - To understand input and output.	**HTML**

	that devices are controlled by algorithms. - To create a simple algorithm that meets a requirement. - To suggest how to fix a problem in their algorithms. - Use the term debugging to mean finding the mistakes.	children have evaluated games, now they look in more depth about how they give a computer instructions.) - To know that an algorithm is a set of instructions. - To create simple algorithms to make an object move. - To create an algorithm. - To debug code. - To understand how block coding works. - To program a simple algorithm using bock coding. - To predict the behaviour of the algorithm that they create in a sequence.	in the form of a storyboard - Break the scene down into small sections of action and dialogue - To understand the terms, script, stage and sprite. - To understand that blocks dragged into the script area makes the sprite move. - To drag blocks in to the script area to make the sprite move in a desired way. - To understand the importance of putting the blocks of scratch script in order. - Correct mistakes in their animation programs - Create their own sound and graphics for the sprites and the backdrop	of what block coding is. - To know how to add a condition to a program. (if/when) - To use coordinates, including negative numbers, to place a sprite. - To work through an algorithm to find errors.	- To design an interactive game. - To use sequences and repetitions in code. - To refine procedures to improve desired outcomes. - To combine procedures to solve more complex problems.	

			- Explain the connection between their storyboard and the scene they're animating			
Computer Networks	**How to use the school network** - To log in to LGFL. - To log on to the school's computer network. - To understand that they have a space 'online' where their work is stored. - To understand the importance of not sharing their password with anyone. - Children are able to navigate age-appropriate websites. (whoami, cbeebies, busythings) - Children know what to do if they find something inappropriate online. - Children know what is meant by personal information and develop awareness of why it is special.	**Super searchers** - To understand that the internet contains a large amount of information. - To understand that web sites have a specific address e.g. www.bbc.co.uk/ - To begin to select key words from a question. - Bring up a search engine and type in key words. - To recognise the layout of a web page, recognise web addresses, menu buttons and links. - To be aware of responsible internet use and the rules of the school.	**G Suite (And the skills required to use Google Classroom)** - To be able to log in to their G Suite account (pupils should have been able to do this during the email unit in Year 2.) - To understand that 'the cloud' are servers off site. Look at the school's server. When we save something on our school system, it is saved here. When we save something to 'the cloud' it is saved elsewhere. Microsoft cloud and Google cloud.	**Search Engines** - To undertake a key word search. - To compare the results of different searches and search engines - To use note-taking skills to know what to copy and paste from a web site. - To use tabbed browsing to open two or more websites simultaneously. - To open a link in a new window or tab. - To open a document and view it. - To be aware of the dangers of	**Complex searches** - To undertake complex searches using + and OR and find the phrase in inverted commas. - To recognise the issues of copyright and importance of acknowledging sources. - Use a range of sources to check validity and recognise different viewpoints and the impact of incorrect data - Recognise that the Internet may contain material that is irrelevant,	**Effective searching** - To use search engines effectively. - To search for images, videos. - To understand how search results are ranked. - To recognise adverts within the results. - To corroborate information by looking at least two sources. - To read web addresses to begin to consider the authenticity of the information.

		- To begin to navigate within a website using hyperlinks and menu buttons to locate information - To begin to manipulate information using copy and paste for a specific purpose.	- To open a Google Doc. - To type, change the format, size and colour of the text. - To add an image. - To add bullet points, - To save to Google drive. - To share a document with a class member. - To find a document that has been shared with them. - To collaborate on a document in line with class topic.	downloading from the internet. - To have an awareness of copyright of images. - Be aware of how to report concerns when in school and out of school. - Our School Network – talk by OpenAir	bias, implausible and inappropriate - To be able to describe how they found information and the choices they made in its presentation - To talk about personal safety when using the Internet and know how to keep safe and what to do if they find inappropriate materials	
Productivity	**Our favourite things** - To understand and talk about how computers can be used to sort and classify. - Begin to recognise that ICT allows quick changes. - Recognise that there is a connection	**Data Recorders** - To use ICT to present data in a chart and / or pictogram. (Suggested link to Geography topic, e.g chart temperature, rainfall, temp in other countries)	**Presenting data - Rocks** - To input data into a prepared database. - To sort and search a database to answer simple questions. - To use the	**Green Screen Videos** - To plan a video using a storyboard. - To use DoInk to capture video. - To add layers to a video. - To evaluate	**Databases** - To design questions using key words, to search a large pre-prepared database. - To add to a database and recognise the	- To select from a variety of ICT applications to present text images and sounds effectively and communicate specific information

between data collected in class (verbally , tally etc) and the information presented on screen - To develop familiarity with the keyboard; space bar, backspace, shift and enter.	- To understand that if data has not been entered accurately it cannot be used to provide the answers to questions.? - To recognise that ICT allows quick changes. Compare to graph making in maths books. - To draw conclusions from data they have collected. (Give the children a graph to complete and answer questions about – link to geography) - To develop different criteria and create own pictograms. (Favourite animal, country, crisp flavour, link where possible)	terms cells, rows and columns. - To know what a spreadsheet is. - To use ICT to construct a branching database. - To appreciate that a large diagram can be neatly stored and viewed on a screen. - To use ICT to create a survey. - To present their results in different ways.	work through peer assessment and self-evaluation and make suggestions for suitable improvements - Discuss and evaluate the quality of their own and others' captured images or video and make decisions (eg. keep, delete, change) - Use software to edit put still images and video together to create a sequence for a story, or information piece - To add captions and sound to a video. - To understand that several layers can be added and combined in	need for accuracy. - To make queries using and/or to search data when looking for relationships and patterns in data (complex searches) - To check for accuracy by checking data, using different views, search tools, and graphing. - To use graphs to provide supporting evidence for their conclusions and copy and paste it into other documents. - To create a database planning own fields, rows and columns. - To enter formulae into a spreadsheet and modify	and ideas for a specific audience. - To organise their information appropriately and identify appropriate choices and links - To understand the potential of multimedia through comparing and contrasting a variety of applications - To understand the importance of evaluation and adaptation of individual features to enhance the overall presentation - To know how to save an image as a GIF or J peg for smaller file size.

				one file.	the data, (simple calculations + -/ X total) Use 'SUM' .	
Creativity	**Making an e-book** - To know that pictures can be stored and retrieved. - To add captions to pictures. - To develop familiarity with the keyboard; space bar, backspace, shift and enter. - To begin to use tools in a paint package.	**Authors** - To take a photo and video using the iPad and understand how to view it and where it is stored. - To add photos, drawings, text and sound to a book in the Book Creator app. - To be able to select text on an iPad by long pressing. - To change the text by using bold, italic and underline tools. - To use drag and drop to edit book. - To appreciate how changes can be made when using a digital device. - To use airdrop to share book.	**Animation** - To plan a stop motion animation using a story board. - To collect suitable images and store them in a folder. - To understand that several pictures viewed in quick succession makes a video. (link to magic lanterns.) - To add movement to a time line. - To add sound to a time line. - To evaluate work, make changes and suggestions.	**Augmented Reality** - To understand that augmented reality can combine the real world and digital content. - To plan a trigger image with sufficient detail. - To plan the digital overlay. - To record and upload own video, image or voice recording. - To consider how augmented reality can help the class with their learning.	**Music Producers** - To explore the types of music that can be made. - To explore recording music, starting and stopping at different points. - To explore the drum machine. - To plan a simple piece of music. - To produce a piece of music. - To use loops to extend a piece of music.	

Communication and Collaboration	Puppet Masters	Emailers	Attached to email	We are co-authors	Blogging	Social Media
	- To work collaboratively on a project. - To understand that computers allow us to share our work. - To know that changes are easy to make. - To record sound in to a microphone. - To develop familiarity with the keyboard; space bar, backspace, shift and enter. - To save their work.	- To understand that email is 'electronic mail' and that it means sending a message to a specific person or people. (relate to sending letters) - To look at email addresses and how they are made up. - To log in to their G Suite accounts. - To send a message using Gmail - To reply to a message using Gmail. - To understand that written messages should be respectful and written as well as can be. - To understand that some messages can be rude and inappropriate and to know what to do if they receive	- To understand that there are different ways of communicating online, some are private and some public. (email and social network.) - To appreciate that all communications can be recorded and offensive behaviour is viewed strictly. - To know how to access emails. - To open an email. - To reply and forward an email. - To open an attachment and to know the dangers of opening attachments from unknown sources. - To attach a document to an email. (goggle doc) - To use the	- To begin to recognise that anyone can author on the Internet. - To work collaboratively to produce shared content. - To understand responsibilities when posting information online. - To understand that other's work can be edited. - To agree rules on how each other's work should be edited. - To be aware that authors on the Internet can produce content that is offensive, rude and upsetting. - To understand what to do if concerned about the	- To insert hyperlinks – connect to network, linked pages. - To write for an intended audience appropriately and publish to a blogging site. - To understand the potential risk of writing a blog that is public. - To know how to manage the risk and to explain the rules for staying safe when blogging. - To understand that some blogs can be malicious, inappropriate or offensive and what to do if that happens. - To know not to publish other people's pictures or	- To understand that what is posted on social media is never private, even when you think only your friends can see what you post. - To consider the affect that messages can have on your self-esteem. - To create a set of rules that are healthy when using social media.

		such an email. - To know to only open an email if you recognise whom it is from.	address book.	content of something. - To know the school rules about reporting concerns.	information. - To know that content put online is extremely difficult to remove.	