



St. Catherine's
RC Primary School

Subject Progression: Computing

Be who God wants you to be and so set the world on fire

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Overview of Learning Topics

Subject	Autumn		Spring		Summer	
EYFS	See EYFS progression for key skills learnt throughout the year (on the following pages of this document). Please also see the EYFS long-term plans for more detail.					
Year 1	Gaming & Coding	Images and pictures	Fact files/Labels, posters and leaflets/ Internet research	Pictograms, linked to animals topic Computer Networking	Modelling	Beebots—controlling a programmable toy
Year 2	Computer Science -Simple algorithms	Digital Literacy-Making simple searches	Digital Literacy-What is a browser?	Digital Literacy- What can I share online?	Information technology-Publishing to paint	Information technology-Pictograms
Year 3	Presentations	Databases	Logo	Graphics/Internet	Espresso Coding Dazzle	Building Computer Games
Year 4	Computer Science: Logo; Programming an animation; Makey Makey		Digital Literacy: Internal parts of a computer; Bookmarks		Information Communication Technology: Creating a leaflet; Databases; QR Codes	
Year 5	Computer Science - Programming	Information Communication Technology - iMovie Trailers	Computer Science - Programming a physical device	Information Communication Technology - Powerpoint	Digital Literacy	
Year 6	Digital Literacy: Presenting to a Web-Based Audience	Computer Science: Programming	Information Technology: Sketch Up	Computer Science: Microbit	Information Technology: Making Movies	Digital Literacy: Picture Perfect

Subject Progression Document: Computing

EYFS			
Birth to Three	Personal, Social & Emotional Development	Express preferences and decisions. They also try new things and start establishing their autonomy. Play with increasing confidence on their own and with other children, because they know their key person is nearby and available. Grow in independence, rejecting help (“me do it”).	
	Physical Development	Reach out for objects as co-ordination develops. Pass things from one hand to the other. Let go of things and hand them to another person, or drop them. Develop manipulation and control.	
	Understanding the World	Repeat actions that have an effect.	
Three & Four-Year- Olds	Personal, Social & Emotional Development	Remember rules without needing an adult to remind them.	
	Physical Development	Match their developing physical skills to tasks and activities in the setting.	
	Understanding the World	Explore how things work.	
Children in Reception	Personal, Social & Emotional Development	Show resilience and perseverance in the face of challenge. Know and talk about the different factors that support their overall health and wellbeing: - sensible amounts of ‘screen time’	
	Physical Development	Develop their small motor skills so that they can use a range of tools competently, safely and confidently.	
	Expressive Arts & Design	Explore, use and refine a variety of artistic effects to express their ideas and feelings.	
Early Learning Goals	Personal, Social & Emotional Development	Managing Self	Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. Explain the reasons for rules, know right from wrong and try to behave accordingly.
	Expressive Arts & Design	Creating with Materials	Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Subject Progression Document: Computing

Subject	Year 1	Year 2
Computer Science	<p><u>Creating Games</u> Can I design sprites? Can I add a background? Can I add a timer to my game? Can I add sound FX?</p> <p><u>BeeBot</u> Can I name basic directions up, down, left, right? Can I use the direction buttons to program the Bee Bot to move Fd, Bk, Lt, Rt? Can I program my Bee Bot to follow a simple route? Can I understand that an algorithm is a set of instructions? Can I debug my algorithm if I have made an error?</p> <p><u>Daisy the Dinosaur</u> Can I understand that an algorithm is a set of instructions? Can I understand that I need to connect and sequence commands to make an algorithm? Can I record my predictions?</p>	<p><u>What is an algorithm?</u> Can I understand that an algorithm is a set of instructions? Can I understand that I need to connect and sequence commands to make an algorithm? Can I predict a simple algorithm? Can I debug my algorithm if I have made an error?</p> <p><u>Scratch Junior</u> Can I add loops into my algorithms? Can I add a Say command? Can I record a sound?</p> <p><u>Daisy The Dino</u> Can I use a conditional statement in my algorithms? Can I record my predictions? Can I create my own programs?</p>

Subject Progression Document: Computing

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Information Communication Technology	<p><u>Publishing</u> Can I identify a familiar paint app? Can I use a simple pallet to draw a picture? Can I use tools such as a shape and fill tool? Can I use paint effects to enhance an image?</p> <p><u>Pic collage</u> Can I use a camera app? Can I insert images into Pic Collage? Can I resize images? Can I move my image to a new position? Can I add a label?</p> <p><u>Pictogram</u> Can I collect data? Can I add data to a pictogram? Can I interpret results from my pictogram?</p>	<p><u>Publishing Book Creator</u> Can I describe what an eBook is? Can I know which devices I can use to read an eBook? Can I know which app to use when creating eBooks? Can I add text, images, sound & video into my eBook?</p> <p><u>PowerPoint</u> Can I explain what a presentation is? Can I add text, images & sound into my presentation? Can I use editing tools to improve my presentation? Can I add animation effects? Can I share my presentation?</p> <p><u>Databases</u> Can I describe what a database is and how they can help us collect information? Can I add data into a spreadsheet and understand that data needs to be organised into 'Fields'? Can I understand that a 'Record' of information will be created? Can I search my database to find specific information using the 'Filter' tool?</p>

Subject Progression Document: Computing

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Digital Literacy	<p><u>What is a browser?</u> Can I recognise an Internet browser e.g. Google Chrome, Safari, Microsoft Edge? Can I identify a Search Engine e.g. Google, Bing, Yahoo and understand why and how we use them? Can I understand what hyperlinks are? Can I can complete some simple searches?</p> <p><u>Making simple searches</u> Can I recognise Google as a search engine? Can I make a simple search to find an image? Can I view and select an image?</p> <p><u>What can I share?</u> Can I understand that there can be dangers online? Can I identify some online dangers? Can I know that I can share my first name only online? Can I know that an online name can help keep me safe? Can I know that I should not share my age or where I live or which school I go to?</p> <p><u>Who can help?</u> Can I talk about the websites I like to use? Can I discuss online dangers e.g. Bad behaviour, pop-ups, unsuitable images etc? Can I know how I should behave online? Can I know who to ask for help?</p> <p><u>External Parts of a computer</u> Can I name the external parts of the computer? Can I know where some of the components connect to the computer? Can I understand why we need each component?</p>	<p><u>What is the internet?</u> Can I talk about the games and apps I like to use on the internet? Can I recognise an Internet browser? Can I know the Internet is many computers linked together in a network? Can I use the internet on different devices? Can I understand that the Internet can be wireless?</p> <p><u>How do I research?</u> Can I understand how to use the Internet? Can I know how to use a search engine? Can I understand what hyperlinks are? Can I copy a picture? Can I copy text? Can I understand that items I copy do not belong to me?</p> <p><u>Personal Information</u> Can I understand that there can be dangers online? Can I understand that sharing too much personal information can be dangerous? Can I know how to get help if I run into trouble whilst online?</p> <p><u>How can I keep safe online?</u> Can I know my personal information? Can I know how to behave online? Can I block people who are not behaving online and know that I can ask an adult to help me do this? Can I know who can help?</p> <p><u>Simple searches</u> Can I understand how to use the Internet? Can I know how to use a search engine? Can I understand what hyperlinks are? Can I copy a picture? Can I copy text? Can I understand that items I copy do not belong to me?</p> <p><u>How do the external parts of a computer connect?</u> Can I name the external parts of a computer? Can I know how external parts of a computer connect? Can I understand what Wi-Fi is? Can I understand the parts required to make Wi-Fi operate?</p>

Subject Progression Document: Computing

Subject	Year 3	Year 4	Year 5	Year 6
<p>Computer Science</p>	<p><u>Programming</u> Can I understand that an algorithm is a set of instructions? Can I set up a scene using backgrounds and sprites? Can I create sprites? Can I program sprites to move in different directions and understand that algorithms are controlled by an operator (Green flag)? Can I use a simple variable for speed and distance? Can I use 'say' and broadcasting tools? Can I link backgrounds?</p> <p><u>Scratch</u> Can I create, choose and upload a backdrop? Can I create, choose & upload sprites? Can I program my sprites to move and glide? Can I program sprites to hide/show? Can I use the commands in the Event and Control blocks? Can I time actions and speech bubbles to create dialogue? Can I test & debug my program? Can I download and save my work?</p> <p><u>Sphero</u> Can I understand that a Sphero is a robot which needs to be programmed in the Sphero EDU application? Can I connect the Sphero via Bluetooth? Can I confidently and independent use the 'Drive' program in order to move the Sphero? Can I copy a simple program in order to create shapes? Can I debug errors?</p>	<p><u>Logo</u> Can I recognise Logo as an computer language? Can I know some simple Language? e.g. FD, BK, RT etc.? Can I use logo to create geometric shapes? Can I use loops within a program? Can I program a procedure using Logo? Can I be confident to explore the logo language to create a design?</p> <p><u>Programming an animation</u> Can I add backgrounds and sprites? Can I find code blocks confidently in order to build an algorithm? Can I begin to make a simple program independently? Can I understand why and how we use loops? Can I test and debug independently?</p> <p><u>Makey Makey</u> Can I understand that a Makey Makey device is an invention kit that works with a computer? Can I know how to connect the Makey Makey to the computer? Can I understand how to create a simple circuit using other components e.g. Crocodile clips? Can I understand what will happen if there is a break in the circuit?</p>	<p><u>Programming</u> Can I understand how to set up a game by adding backgrounds and sprites? Can I program my sprite to move up, down, left , right & glide? Can I program a sprite to hide/show? Can I use a conditional statement e.g. 'If' command to trigger instructions? Can I use and program loops? Can I program a variable to create a scoreboard? Can I test & debug my program?</p> <p><u>Sphero</u> Can I understand the similarities when programming with onscreen and with a physical device? Can I understand the Sphero is robotic? Can I create a program to solve a problem using block coding? Can I use iteration (loops), conditionals (If statements) and variables within my program? Can I understand how to program in units of time, distance and speed?</p> <p><u>Programming a quiz</u> Can I understand how to set up a game by adding backgrounds and sprites? Can use more complex code e.g. operators, variables? Can I understand that coding with conditionals, gives the player a choice? Can test and debug independently?</p>	<p><u>Programming</u> Can I understand how to set up a game by adding backgrounds and sprites? Can I program my sprite to move? Can I program a sprite to hide/show? Can I use a conditional statement e.g. 'If' command to trigger instructions? Can I use and program loops? Can I program a variable with operators to create a scoreboard? Can I use logical reasoning to solve a problem by deconstructing an algorithm? Can I test & debug my program?</p> <p><u>HTML</u> Can I add code to a text editor? Can I add empty tags for my text e.g. <p>? Can I add container tags for my text <H1>? Can I program code to add an image to my webpage? Can I program code to resize my headings? Can I add code to colour to my text?</p> <p><u>Micro:Bit</u> Can I understand that a Microbit is a computer? Can I understand how to program a Microbit using Block Code editing? Can I know how to create an algorithm and use the emulator to test the results? Can I build programs that include iteration, variables and conditionals? Can I know how to download a program onto the Micobit device?</p>

Subject Progression Document: Computing

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<p>Information Communication Technology</p>	<p><u>Comics</u> Can I use a comic template to add images and text? Can I download and import images? Can I add a background? Can I add speech bubbles and shapes? Can I use editing tools e.g. font, size & colour? Can I save a document?</p> <p><u>Graphs & Charts</u> Can I collect data? Can I enter and organise data into cells and columns? Can I resize columns and rows? Can I edit data? Can I create a bar graph to show and interpret results?</p> <p><u>Movies</u> Can I identify relevant applications to use when video making? Can I understand why a timeline is used? Can I import video & images? Can I add text?</p>	<p><u>Creating a leaflet</u> Can I identify the relevant applications in order to create a leaflet? Can I use a Publishing template confidently? Can I edit the document independently so that colour, font, text, size can be added and changed? Can I import images? Can I work between multiple pages?</p> <p><u>Databases</u> Can I understand what a database is and where and how these are used? Can I understand what a database 'Field' is? Can I understand that databases are made up of 'Records'? Can I understand that a database can be searched and filtered?</p> <p><u>QR Codes</u> Can I understand that a QR (Quick Response) code links to further information? Can I identify where QR codes are used? Can I use a QR scanner confidently and independently to find information? Can I use a QR creator to make codes?</p>	<p><u>PowerPoint</u> Can I understand that presentations are a way of communicating information formally? Can I understand how information is organised into small parts? Can I understand how to present information in different formats e.g. embedded video, sound, graphs, webpages? Can I use tools such as action buttons and hyperlinks? Can I use enhancing tools such as animations and transitions? Can I add and present media?</p> <p><u>Introduction to spreadsheets</u> Can I enter and organise data into cells and columns? Can I sort and filter data in different ways? Can I know that each cell has a 'Cell reference'? Can I calculate data (-, +) using a simple formula? Can I understand the use of the Auto Sum? Can I create a graph to show and interpret results?</p> <p><u>iMovie Trailers</u> Can identify relevant applications to use when video making? Can use a video template to create a trailer? Can I Import video & images? Can I add text to the Outline and Storyboard? Can I import a background track? Can I save my finished trailer in an MP4 format?</p>	<p><u>Sketch Up</u> Can I create a basic 2D geometric shape? Can I use the Push/Pull tool to create a 3D model? Can I use editing tools to add detail e.g. shape and pencil? Can I use the rotate tool to view all sides of my model? Can I use the arc tool to create a roof? Can I add materials to decorate my design?</p> <p><u>Spreadsheets</u> Can I enter and organise data into cells and columns? Can I edit data? Can I sort and filter data in different ways? Can I understand how modelling works within a spreadsheet? Can I calculate data using a formula and Auto Sum? Can I create a graph to show and interpret my results?</p> <p><u>Making Movies</u> Can I identify relevant applications to use when video making? Can I understand the process of creating a video? Can I understand why a timeline is used? Can Import video & images? Can I add text? Can I know how to use editing tools? e.g. crop and split video clips. Can I add sound FX, music and narration?</p>

Subject Progression Document: Computing

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Digital Literacy	<p><u>Internet searches</u> Can I know what a browser is and can name some of these? Can I name some common search engines and understand what they do? Can I make a simple search? Can I refine a search in order to speed up the search process? Can I understand the difference between an advert and a search result? Can I copy an image and text? Can I download and save images?</p> <p><u>Passwords</u> Can I understand where we use passwords? Can I understand that passwords protect our data? Can I create a passwords between 8-12 characters long? Can I make a strong password which is made up of upper/lower case letters, numbers & symbols? Can I understand that passwords should be changed regularly?</p> <p><u>Avatars</u> Can I understand what an avatar is and how it helps to keep us safe? Can I know how to create an avatar? Can I understand that an avatar can represent a child's image and interests? Can I understand that avatars can come as cartoons or images?</p>	<p><u>How do you communicate online?</u> Can I identify different ways of communicating online? Can I understand how to behave when communicating online? Can I understand the impact of negative behaviours? Can I understand the term 'Digital footprint'? Can I understand how we should present ourselves online? Can I understand how to keep safe and who can help?</p> <p><u>Online Friends</u> Can I understand that virtual friends are strangers? Can I understand which aspects of personal information are safe to share? Can I understand the pro's and con's of online relationships? Can I understand who can help?</p> <p><u>Online Searches</u> Can I understand the job of an Internet browser and a search engine? Can I understand how to create a search? Can I understand how to refine online searches? Can I understand the difference between a search result and an advertisement?</p>	<p><u>Electronic Communications</u> Can I understand what is meant by electronic communication? Can I identify ways in which Electronic Communication can be used? Can I understand how information is sent/received? Can I understand the components required to communicate electronically?</p> <p><u>What is social Media?</u> Can I identify some familiar social networking sites and understand how such sites are used for communication? Can I understand the positive and negative uses of social networking? Can I know where to seek help and support?</p> <p><u>Privacy Rules</u> Can I understand the need for privacy online? Can identify how privacy rules are used in everyday life? Can I understand and have the knowledge to edit privacy settings? Can I know where to seek help and support?</p>	<p><u>Plagiarism</u> Can I understand what is meant by the term Plagiarism? Can I understand the difference between Direct and Accidental plagiarism? Can I understand the term Copyright? Can I understand the effects of plagiarism on the original author/creator?</p> <p><u>Cyber Bullying</u> Can I understand the difference between cyberbullying from physical bullying? Can I understand the mental effects of cyberbullying? Can I understand the consequences of cyberbullying? Can I use strategies to help?</p> <p><u>Picture Perfect</u> Can I understand the dangers of posting images online? Can I understand that images can be traced to a location? Can I understand that an image can be copied and changed? Can I understand that I should ask for permission before reposting an image of somebody else?</p>

Subject Progression Document: Computing

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Digital Literacy continued	<p><u>Showing Respect</u> Can I understand that I should behave as I would in the real world whilst online? Can I identify negative online behaviours? Can I understand who can help if I need support whilst online?</p> <p><u>How do I save information from the Internet?</u> Can I make a simple search? Can I copy an image and text? Can I download and save images?</p> <p><u>What is the WWW?</u> Can I understand the term World Wide Web? Can I explain that the WWW is a collection of webpages? Can I understand the difference between the WWW and the Internet? Can I name the creator of the WWW? Can I understand why the WWW is important?</p>	<p><u>Digital Footprint</u> Can I understand the term 'Digital footprint'? Can I understand how we should present ourselves online? Can I understand how to keep safe and who can help? Can I understand the difference between a passive and active digital footprint? Can I understand the impact of a digital footprint?</p> <p><u>Internal parts of a computer</u> Can name the internal parts of a computer? Can I understand the job of each component? Can I understand how components are connected? Can I understand that components can be replaced?</p> <p><u>Bookmarks</u> Can I understand the term bookmark and can I understand that this means to save a webpage? Can I understand how to Bookmark a webpage? Can I understand how to manage and organise bookmarks? Can I understand the term History and can I understand that this is all the webpages that have been visited? Can I understand how the History function can be very useful when revisiting websites?</p>	<p><u>Online Profiles</u> Can I understand why an online profile is used? Can I understand the term 'identity' and how to keep this safe? Can I understand that privacy settings can be changed? Can I know who can help?</p> <p><u>How do I download Files, Images, Text?</u> Can I understand the term 'Download'? Can I understand that documents are downloaded to a specific folder and may need to be moved? Can I understand that different types of documents are downloaded in different formats e.g. Pdf, Jpeg, Mp4? Can I understand that not all downloadable documents are editable?</p> <p><u>Computer Networks</u> Can I identify familiar networks? Can I understand what components make up a network (School) and how these are connected? Can I understand the difference between a local area network and a wide area network? Can I understand why a network needs to be managed?</p>	<p><u>Presenting to a web-based audience</u> Can I understand the term Video Conferencing? Can I understand what technology is required to make a video call? Can I understand the purpose of video calls? Can I understand how to use video conferencing tools? Can I understand the etiquette of video calls?</p> <p><u>Web Tools</u> Can I understand that web tools are online software programs? Can I understand that Web tools can be used to create content, store data, create/edit videos, edit photos and collaborate? Can I understand what a blog is? Can I understand how podcasts work? Can I understand how video content is created and uploaded? Can I understand how web tools host content?</p> <p><u>Computer Networks</u> Can I understand what a network is and can I give examples? Can I understand why we use usernames and passwords? Can I understand why we need to have user agreements? Can I understand what encryption means and can I give examples where this is used? Can I explain how Anti-Virus, Firewall, Content filtering helps to keep us safe?</p>