Buttsbury Primary School
Computing Progression Document

EYFS	Skills Progression	Early Learning Goals (Understanding the world)
	• Explore uses of technology(hardware) within school and home. • Write instructions (algorithms) for programmable toys. • Use directional arrows to programme a toy. • Make predictions about how a programmable toy will react to the instructions it has been given. • To recognise what screen time is and understand that too much can be bad for us. • Children to sort themselves using yes or no questions. • Create branching databases. • Create simple pictograms. • Learn to log in. • Learn to use a mouse/trackpad to move, click and drag	• Foster their understanding of our culturally, socially, technologically and ecologically diverse world. • Children are introduced to basics of safe use of technology and how to report unsettling episodes *Teachers to ensure that technology flows across all areas of learning and provide access to technology to ensure it is incorporated through everything as part of everyday life* **Where to get help should be included in all Online Safety Sessions.**

EYFS Brain Busters	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	BB – instructions tell us what to do BB – A prediction is something you think will happen	BB - We can log in and out of a Chromebook.	BB - We can move the cursor with a mouse or trackpad.	BB - We log out of a computer to keep our things safe.	BB - A Beebot can move forwards, backwards and turn left and right.	BB - Data is information used to make decisions

EYFS Brain Vocabulary	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	instruction technology debugging	computer keyboard mouse letters numbers	left click right click arrow cursor paint		instruction programme	Data Branching database sort

		type log in log out computer safety password	stamp		

Year 1	Common uses of information technology inside and beyond school.	Data handling Collecting, analysing, evaluating real world data/problem solving	Programming Controlling and programming using hardware and software.	Digital media- Creating, organising, store, manipulate and retrieve digital content.	Online Safety
	Understand and identify different forms of technology and explain how they can help us. Identify the different parts of a computer, using a mouse/touchpad to click and drag objects on a screen, open programs and create pictures. To understand and use a keyboard to write familiar words, edit text (including deleting) and use the arrow keys to move the cursor. To save their work to a computer or to a cloud.	Understand how we can gather data, such as labelling, counting and grouping objects in one or more ways. Demonstrate an understanding of data by describing how to group objects, comparing groups and recording To represent data in different forms –e.g. pictograms, tables and branching databases.	To create an algorithm for their own pictures/sprites. To show that a series of commands can be joined together Understand how to command or program a robotic toy (e.g.bee-bot) and make predictions about how our commands can affect an outcome. Physically act out a set of instructions (offline) Compare directional language including 'forward', 'backwards', 'left turn' and 'right turns' and combine these to create a sequence. Plan a sequence of precise commands (algorithms) to control a programmable toy, debugging any mistakes.	Use different paint tools to make marks and draw a pictures To create a range of pictures using different artistic styles and explain whether they prefer using a computer or artistic media. Using a digital camera to record a video.	**Online Relationships** Identify how people's feelings and emotions can be affected by online content. **Privacy and Security** Know how to keep safe when using technology **Health, Wellbeing and Lifestyle** Discuss ways to balance time spent online and offline. **Where to get help should be included in all Online Safety Sessions.**

Year 1 Brain Busters	Computing systems and networks	Creating media – digital painting	Algorithms unplugged	Data and information – collecting and representing data	Programming 2 - Using Bee Bots	Skills showcase
	BB1: Technology is anything made by people to help them.	BB1: We use the paintbrush to paint smooth lines	BB1: A computer only does what we tell it to do- This is called an input.	BB1: We can compare data, like the number of things in a group.	BB1: Bee-bots are programable robots.	BB1: We can write words on a word document.
	BB2: We use a trackpad to move the cursor.	BB2: the fill button colours a large space.	BB2: Algorithms are a set of instructions.	BB2: Data is information that can be used.	BB2: Instructions need to be precise	BB2: We can use digital drawing tools to design models.
	BB3: Paintz.app is a digital drawing program.	BB3: The spray can creates lots of dots.	BB3: A bug is a mistake in an algorithm.	BB3: A pictogram represents data.	BB3: An algorithm is a set of instructions.	BB3: We can record data on a spreadsheet.

Year 1 Vocabulary	Computing systems and networks	Creating media – digital painting	Algorithms unplugged	Data and information – collecting and representing data	Programming 2 - Using Bee Bots	Skills showcase
	paint log on trackpad click drag technology typing words font size font colour	tool paintbrush erase fill undo line spray shape tools	bug algorithm instructions code debug	data chart data collection digitally categorise branching database	bee-bot program algorithm precise code	Word processing Digital painting Algorithm Data

Year 2	Common uses of information technology inside and beyond school.	Data handling Collecting, analysing, evaluating real world data/problem solving	Programming Controlling and programming using hardware and software.	Digital media- Creating, organising, store, manipulate and retrieve digital content.	Online Safety
	To understand the uses and features of information technology, identifying examples of computers and their uses as an element of IT. Understand different uses of information technology within the school and outside the school and say how these can be used for different purposes. To recognise common types of technology and how they help us and demonstrate how and why we can use these. To understand and use a keyboard to write familiar word Use the shift key to type capital letters Punctuate a short sentence and edit simple mistakes (including deleting) and use the arrow keys and mouse to move the cursor.	Understand how we can gather and enter data into different formats, including tally charts, pictorial representations, pictograms Understand how data is used in different ways. Understand how data is gathered and how to interpret the data gathered. To analyse data and make informed decisions using this.	Make predictions about algorithms, match sequences and change the outcomes of these. To decompose a game and predict the algorithms that are used. To design an algorithm and explain what my algorithm should achieve To use abstraction to reduce and refine our algorithms. (removing unnecessary details) To debug any instructions in an algorithm. To physically act out a set of algorithms.	Develop their understanding of how to take photographs/ digital images using a camera and other devices. To take photos in the landscape and portrait format and say which format looks better. Identify when they have taken a good photo and identify how to take a better photograph Think about and experiment with lighting. To be able to edit a photo and experiment with different effects and explain their choices. Plan an animation project. Create a stop motion animation using picture they have taken or created. To know how to change a given design, choosing backgrounds, characters and	**Privacy and Security** Practise keeping information safe and private online. To know when to deny permission online. **Online Reputation** To recognise that not everything online is true **Where to get help should be included in all Online Safety Sessions.**

	To save and retrieve their work.			create a program based on the new design.	

Year 2 Brain Busters	What is a computer?	Algorithms and debugging	Word processing	Scratch Jr	Data handling	Stop Animation
	BB1: A desktop computer sits on a desk.	BB1: algorithms run in the order they are created.	BB1: We can move the cursor by using the mouse of arrow keys.	BB1: An animation is a moving video.	BB1: We can retrieve information from a computer.	BB1: Stop animations use lots of pictures to create moving images.
	BB2: An input is a way of telling a computer what to do.	BB2: algorithms can be looped (repeated).	BB2: A keyboard is used to input information.	BB2: we can add a background to an animation.	BB2: sensors detect information like heat and light.	BB2: We need to take clear, in-focus photos for our animations.
	BB3: A tablet has a touchscreen	BB3: Abstraction is making algorithms simpler.	BB3: You can make text bold and italic	BB3: writing an algorithm is called coding.	BB3: Data can help us make choices.	BB3: we create stop motion animations with small changes between images.

Year 2 Vocabulary	What is a computer?	Algorithms and debugging	Word processing	Scratch Jr	Data handling	Stop Animation
	output input keyboard mouse screen tablet	online personal information loop abstraction	bold italic backspace space bar permission	scratch jr programming animation loop	interactive map digital content monitor	images animation stop motion plan decompose

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Year 3	Common uses of information technology inside and beyond school.	Data handling Collecting, analysing, evaluating real world data/problem solving	Programming Controlling and programming using hardware and software.	Digital media- Creating, organising, store, manipulate and retrieve digital content.	Modelling and simulation software-	Online Safety
	Use different font sizes, colours and effects to communicate meaning. Insert and edit simple tables. Use appropriate editing tools to ensure their work is clear and error free (using tools such as spell checker, thesaurus). Use cut, copy and paste to refine and reorder content. Select suitable text and images from electronic resources and use it appropriately in their own work.	Use search technologies effectively, appreciate how results are selected and ranked Understand the dynamics of search engines and know that there are different search engines - some within sites and some for the whole of the Internet (e.g. Google). Use them appropriately. Develop key questions and key words to search for specific information to answer a problem. Use researched information to complete specific tasks e.g. copy, paste and edit information to present work Collect appropriate information, enter it into a database and use the database to answer simple questions.	Design, write and debug programs that accomplish specific goals Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs Solve problems by decomposing them into smaller parts. Create code to change appearance of a sprite Create code to move a sprite in four directions I can edit the sprites and backgrounds in my program	Storyboard an animation prior to creating it Create a short-animated sequence from captured images in simple storyboarding software Use an onion layer to create smooth transitions Import a background into an animation	NA.	**Online Relationships** Explain some risks of communicating online with others I don't know well. **Privacy and Security** Give reasons why I should only share information with people I choose to and can trust. **Health, Wellbeing and Lifestyle** Explain why spending too much time using technology can sometimes have a negative impact on me. Give some examples of activities where it is easy to spend a lot of time engaged (e.g. games, films, videos). **Where to get help should be included in all Online Safety Sessions.**

		Organise, present, analyse and interpret the data in tables or charts Understand what a database is by creating a physical one				

Year 3 Brain Busters	Computing Skills and Word	Search Engines	Dressing Up Costume	Smoking car	Pivot Animator	Excel
	BB1: You can create word documents on Microsoft Word	BB1: The more specific your search is, the better results you will get.	BB1: An algorithm is a set of instructions.	BB1: We write code to control sprites	BB1: An animation is a combination of different scenes to create motion.	BB1: A database holds information.
	BB2: The 'A' icon when clicked will alter the colour of the text.	BB2: Search results are ranked in order of usefulness and relevance.	BB2: Debug means to correct errors.	BB2: We write code for each action a sprite makes	BB2: Pivot animator is a program used to create an animation.	BB2: Top trumps are an example of a database.
	BB3: You have to use the insert button to create a table.	BB3: Google is the most popular search engine.	BB3: After debugging an algorithm we test it.	BB3: You can create code that will have different outcomes e.g. fd1, fd 10	BB3: Animations can be used to tell stories.	BB3: Excel is a commonly used program for databases.
	BB4: You can copy and paste from the internet into a Word Document.	BB4: Use the right button on your mouse to copy and paste.	BB4: Decompose means to break down into smaller parts.	BB4: In Scratch you can create your own background and sprites to use	BB4: You need to add a frame each time you want to save a movement.	BB4: A spreadsheet holds lots of different types of data.
	BB5: Spell check is used to correct spelling errors	BB5: Copyright means someone has ownership over a product.	BB5: We need to write code for all actions in a game	BB5: You have to write code to change backgrounds and accessories	BB5: Animations work best through short, concise movements.	BB5: Data from spreadsheets can be presented in charts and graphs.

Year 3 Vocabulary	Computing Skills and Word	Search Engines	Probots	Flowol	Pivot Animator	Excel
	Microsoft font screen windows table mouse copy keyboard	search engine rank Kiddle copyright browser order copy paste	algorithm test program code pixel	control input sprite input click	frame storyboard onion skin import media	spreadsheet column row cell database chart

Year 4	Common uses of information technology inside and beyond school.	Data handling Collecting, analysing, evaluating real world data/problem solving	Programming Controlling and programming using hardware and software.	Digital media- Creating, organising, store, manipulate and retrieve digital content.	Modelling and simulation software-	Online Safety
	Use layout, format, graphics and illustrations for different purposes or audiences. Recognise key features of layout and use design features such as text boxes, columns and borders. Use page setup to select different page sizes and orientations. Select and import images and prepare for use (cropping, resizing, editing). Start to independently select ways to communicate their own ideas. Contribute to discussion forums, blogs and surveys on a Learning Platform. Begin to understand about online identities	NA	Design, write and debug programs that accomplish specific goals Use Logo for programming algorithms (pen-up/pen-down, repeat commands etc.) to create shapes/patterns. Test to detect errors and modify procedures or sequences where necessary. Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs. Create procedures (e.g. a square in Logo) Create sequences (e.g. a logo procedure that rotates x degrees and draws another square and so on.)	Use ICT to select and record voice and sounds. Start to evaluate media used in the world around us. Acquire, store and retrieve images from cameras, scanners or the internet and begin to use paint packages or photo-manipulation software to change an image Select specific areas of a painting, copy and paste to make repeating patterns. Develop greater control over the digital stills use the enhanced tools (Landscape, Zoom). Discuss and evaluate the quality of their own and others' captured images.	Discuss ways simulations are used to help us (e.g. flight simulations to teach pilots, driving simulators, weather pattern simulations etc.). Discuss their use of simulations and compare with reality. Be able to explore the effect of changing variables. Work with variables and various forms of input and output Use variables to make and test predictions to support learning in other subject areas.	**Online Bullying** Explain why I need to think carefully about how content I post might affect others, their feelings and how it may affect how others feel about them (their reputation). **Self-image and identity** Explain how my online identity can be different to the identity I present in 'real life'. **Online Reputation** Describe how others can find out information about me by looking online – including information posted online is never deleted. **Where to get help should be included in all Online Safety Sessions.**

	and differences between private or public presence Discuss and evaluate blogs/wikis/websites					

Year 4 Brain Busters	**Duck Builder**	**MSW Logo**	**Audacity**	**Publisher**	**Paint.net**	**Gsuite**
	BB1: A simulation is a safe way of testing things.	BB1: Algorithms are instructions for computers to follow	BB1: A jingle is a short song or tune.	BB1: Publisher allows you to format and position documents easily.	BB1: A logo is a symbol made up of images and texts.	BB1: GSuite is a group of tools that helps to provide collaboration and communication.
	BB2: Duck Builder is an example of a simulation.	BB2: Computers will follow algorithms exactly the way they are written	BB2: A programme used to do specific tasks is called software e.g. Audacity.	BB2: Guides are used to help with your design.	BB2: Paint.net is software used to create images.	BB2: We must use chats sensibly as everything we type and send is stored.
	BB3: Simulations are used to train astronauts.	BB3: 'Bugs' in algorithms are present because of human error	BB3: We can control features such as record and edit using software.	BB3: Royalty free images are non-transferrable	BB3: Paintbrushes can be used to change size, fill and colour.	BB3: You can share a file when 'chatting online' by clicking the + symbol.
	BB4: A parameter is a limit.	BB4: When writing algorithms, we need to link our maths skills	BB4: To import a file means to bring it from one format to another.	BB4: Copyright is the right a creator has over their work/design.	BB4: Layers are a way to edit parts of an image.	BB4: A forum is an online discussion board.
	BB5: Changing parameters in a simulation affects the outcome.	BB5: MSWlogo uses algorithms to draw shapes	BB5: Voice overs are words spoken by a person who is not seen.	BB5: Target audience are the group of people who the product/ service is aimed at.	BB5: Selection tools can create shapes.	BB5: A contacts list is a collection of screen names.

Year 4 Vocabulary	Duck Builder	MSW Logo	Audacity	Publisher	Paint.net	Gsuite
	parameter simulation specified variable audience purpose	procedures patterns fd=forward bk=backward rt=right turn lt=left turn computational thinking	sound record jingle pitch volume microphone sound wave	leaflet design Publisher guide format re-size royalty free copyright word art	paint.net logos symbols brushes image watermark layers tools letter forms	message communication digital email blog Gsuite share personal forum

Year 5	Common uses of information technology inside and beyond school.	Data handling Collecting, analysing, evaluating real world data/problem solving	Programming Controlling and programming using hardware and software.	Digital media- Creating, organising, store, manipulate and retrieve digital content.	Modelling and simulation software-	Online Safety
	NA	Understand computer networks including the internet and how they can provide multiple services, such as the world-wide web. Select an appropriate search engine to find information related to their topic. Develop strategies for finding information checking for bias and different viewpoints (using different keywords, cross checking with other sources etc.). Discuss how internet search engines find, store and rank data. Develop skills to question where web content might originate and understand that this gives clues to its authenticity/reliability (by looking at web	Evaluate ready-made games before designing own to know what makes a good game. Design own game and use a programming tool to create it for use by others. Explain the algorithms to show an understanding of the logical steps and debug where necessary. Work with variables and various forms of input and output. In Scratch, develop more complex flow diagrams/sequences for a specific purpose Use selection, repetition and variables in algorithms (more complex loops, repeats or timed events). Detect and correct errors (debug) to	Independently select, edit and combine sound files. Manipulate the sounds (such as reversing sounds, adding echo, altering speed etc) and using them appropriately considering audience and purpose. Use ICT to produce music for a specific purpose, considering the impact on the audience (e.g. length, style, genre etc.). Evaluate media used in the world around us (video clips, images, sounds etc.). Plan and create a short-animated sequence to communicate an idea, using a storyboard and timeline adding own narration or music.	NA	**Online Relationships** Describe some of the communities in which I am involved and describe how I collaborate with others positively. **Privacy and Security** Explain how many free apps or services may read and share my private information with others. Rights to share or not share information e.g. cookies **Health, Wellbeing and Lifestyle** Describe ways technology can affect healthy sleep and can describe some of the issues. **Where to get help should be included in all Online Safety Sessions.**

		address, author, linked pages etc.). Discuss issues of copyright and downloading material (e.g. mp3s, images, videos etc.). Reference sources used in their work. Use the pre-programming features of data logging software and devices to set up a specific data capture overtime. Use graphical information to answer questions and solve simple problems. Use a range of sensors (temperature, light, sound, etc.). Discuss jobs where data loggers are used in the world (e.g. meteorologists, volcanologists, seismologists).	improve desired outcomes. Solve problems by decomposing them into smaller parts.	Combine stills, video and sound using a video editing package. Make use of transitions and special effects in video editing software and understand the effect they have on the audience.		

Year 5 Brain Busters	Networks and Search Engines	Kodu	Data Logging	Scratch – Broadcasting	Audacity	Stop Animation
	BB1: A computer network is a group of computers that are connected.	BB1: A sub-routine is an action that is a result of a changing routine.	BB1: Data logging is a way of measuring and recording information.	BB1: A sprite is a programable character.	BB1: Audacity is a music editing software.	BB1: A stop animation involves lots of frames being created and put together.
	BB2: Information and data can be shared across a network.	BB2: A digital environment is the physical setting of a game.	BB2: Data loggers can measure sound, light and temperature.	BB2: A script is a set of instructions which tell the sprite what to do.	BB2: The sound file (music) is called a 'track'.	BB2: A frame is a snapshot.
	BB3: The internet is a global network.	BB3: A routine is a repetitive task.	BB3: The metric measure of temperature is Celsius (°C)	BB3: Input is information entered into the computer.	BB3: Importing music means to transfer sound files into a program.	BB3: 'Shorts' is a name for short films.
	BB4: Copyright means giving credit to content creators.	BB4: You can programme using the instructions 'when' and 'do'. E.g. When this happens, do this.	BB4: Sound is measured in decibels (dBA)	BB4: A variable is something that can be changed in a computer game.	BB4: A fade-in is when the volume of a track slowly increases.	BB4: A storyboard is used to plan a stop animation.
	BB5: Search engines search hundreds of billions of pages on the world wide web.	BB5: An NPC is a non-player character that is pre-programmed.	BB5: Light intensity is measured in Lux (lx)	BB5: Conditions are created by the programmer to influence actions in a game.	BB5: An effect can be added to a track to manipulate the sound of the track. E.g. distortion.	BB5: 'The Nightmare Before Christmas' is a famous stop animation film.

Year 5 Vocabulary	Networks and Search Engines	Kodu	Data Logging	Scratch – Broadcasting	Audacity	Stop Animation
	network server router ip address wireless	variable routine sub-routine digital environment reliability	analyse record intervals probe measure automated intensity	sprite script condition rule object if/then	interface fade-in/out track	transitions frames

Year 6	Common uses of information technology inside and beyond school.	Data handling Collecting, analysing, evaluating real world data/problem solving	Programming Controlling and programming using hardware and software.	Digital media- Creating, organising, store, manipulate and retrieve digital content.	Modelling and simulation software-	Online Safety
	Use and refine their skills while independently creating, sending and responding to emails, blogs or forums. Produce formal or informal messages appropriate to the task or to solve problems (requesting information, sharing data etc.). Understand about online identities and differences between private (Learning Platform) or public presence (social networks). Know what acceptable online behaviour is. Critically evaluate blogs/wikis/websites). What makes a good site? Explore safe social network sites. Develop the use of hyperlinks to produce	Design questions using key words, to search a large pre-prepared database. Use complex searches (and/or, is greater/less than) to search data when looking for relationships and patterns in data. Construct, refine and interpret a range of charts (e.g. frequency tables, bar charts, line graphs, pie charts). Identify and enter the correct formulae into cells and modify the data, (simple calculations + - × ÷). Use more advanced formulae (Sum, average, mode etc.).	Evaluate ready-made games, apps or simulations before designing own to know what makes a good game. What will their own game look like? Design own game, simulation or app and use a programming tool to create it for use by others. Explain the algorithms to show an understanding of the logical steps and debug where necessary. Work with variables and various forms of input and output. Write sequences which use outputs and inputs (using selection 'if… then…' type commands) to control events in response to conditions.	Combine stills, video and sound using a video editing package. Make use of transitions and special effects in video editing software and understand the effect they have on the audience. Enhance a presentation by acquiring, storing, and combining images from different sources. Plan and create a short movie to communicate an idea, using a storyboard and timeline adding own narration or music. Evaluate media used in the world around us and what messages varying camera angles portray.	Use an object-based graphics package to design(model). Create images using a range of techniques. Use measurement tools to create scale Use guidelines	**Online Bullying** Describe how to capture bullying content as evidence to share with others who can help me. **Self-image and identity** Explain how identity online can be copied, modified or altered. **Online Reputation** Describe some simple ways that help build a positive online reputation. **Where to get help should be included in all Online Safety Sessions.**

	interactive presentations or websites. Understand how pages link together and recognise the need for clarity. Produce a diagram to show the links between pages.		Use sub routines to decompose the problem into smaller parts Explain the logical steps of the flow diagram in the design process. View code in their own games to start to understand how commercial games are created (e.g. Scratch).			

Year 6 Brain Busters	**Blogs, Websites and email**	**Excel**	**Film Trailers**	**Scratch Games**	**Powerpoint**	**Sketch Up**
	BB1: Online identity is how you are perceived online.	BB1: Spreadsheets can be used to store, filter and search for data.	BB1: Trailers show key parts of a film.	BB1: Scratch is used to code games.	BB1: Hyperlinks create a link to websites and PowerPoint pages.	BB1: Sketch Up is a 3D modelling program.
	BB2: Communicating and posting online creates your online identity.	BB2: SUM = adding cells	BB2: The trailer is used to promote the film.	BB2: Algorithms = set of instructions.	BB2: A 'Home Button' is a hyperlink to the starting page	BB2: The shape tool creates the outline of a 2D shape.
	BB3: Trolls are people who negatively comment repeatedly.	BB3: Data is inputted into cells.	BB3: A storyboard is used to plan a trailer.	BB3: Debug = correct a mistake in algorithms.	BB3: Flow charts can be used to plan hyperlinks	BB3: The push pull tool is used to create a 3D model.
	BB4: Fake news is misleading information.	BB4: Data can be presented as bar charts or pie charts.	BB4: Filmmakers use transitions between shots.	BB4: Variables = information that can change e.g. score.	BB4: Multiple choice games use hyperlinks.	BB4: The orbit, pan and zoom tools allow you to view your shape from all angles.
	BB5: E-mails are formal	BB5: AVERAGE = SUM divided by amount of data	BB5: Editing is a key part of the film making process.	BB5: Tests must be carried out to check for bugs before games go live.	BB5: A hyperlink can be a button, a web address or a picture	BB5: The offset tool can be used to create detail.

Year 6 Vocabulary	Blogs, Websites and email	Excel	Film Trailers	Scratch Games	Powerpoint	Sketch Up
	fake news communication social media cyberbullying online identity e-mail misinformation trolling blog	spreadsheet filter formula(e): SUM AVERAGE cell data mean	storyboard stills transitions special effects soundtrack	no new vocabulary introduced	hyperlink linear non-linear diagram link	perspective axis scale model 2d and 3d orbit