Thomas Bullock Curriculum Map for Computing

	Autumn		Spring		Summer	
EYFS	Through natural development, our modeled teaching and Early Years provision (and enhancements) we ensure that children develop problem solving abilities, listening skills and thoughtful questioning as well as improving subject skills across the seven areas of learning. Through our tailored and progressive Early Years into KS1 curriculum, we build and inspire the foundations for computational thinking, concepts and approaches. We explore varied technology through exposure to a range of devices over time including those old and new.					
Year 1	Technology Around Us (1.1) **Computing Systems and Networks** • Develop understanding of technology and how it can help in everyday lives. • Familiar with the different components of a computer by developing keyboard and mouse skills. • Consider how to use technology responsibly. Prior Learning: Future Learning: 2.1	Digital Painting (1.2) **Creating Media** • Develop understanding of a range of tools used for digital painting. • Use tools to create t digital paintings, while gaining inspiration from a range of artists' work. • Considering preferences when painting with and without the use of digital devices. Prior Learning: 1.1	Moving a Robot (1.3) **Programming A** • Explore using individual commands, both with other learners and as part of a computer program. • Identify what each floor robot command does • Start predicting the outcome of programs. • Learners are also introduced to the early stages of program design through the introduction of algorithms. Prior Learning: 1.1 EYFS - Listening and following instructions. Future Learning: 1.6, 2.3,3.3	Grouping Data (1.4) **Data and Information** • Explore labeling, grouping, and searching • Searching is a Assigning data (images) with different labels • Demonstrate how computers are able to group and present data. Prior Learning: 1.1 Future Learning: 2.4	Digital Writing 1.5) **Creating Media** • Develop understanding of using a computer to create and manipulate text. • Use a keyboard and mouse to enter and remove text. • Consider how to change the look of their text • Justify their reasoning in making these changes. • consider the differences between using a computer to create text, and writing text on paper. Prior Learning: 1.1	**Programming Animations (1.6)** Programming B • Introduction to on-screen programming through ScratchJr. • Learners will explore the way a project looks by investigating sprites and backgrounds. • They will use programming blocks to use, modify, and create programs. • Learners will also be introduced to the early stages of program design through the introduction of algorithms. Prior Learning: 1.1, 1.3 Future Learning: 2.3, 2.6

Year 2	IT Around Us (2.1) **Computing Systems and Networks** • Develop an understanding of what information technology (IT) is • Discuss IT seenin school and beyond in other settings. • Investigate how IT improves our world and the importance of using IT responsibly. Prior Learning: 1.1 Future Learning: 3.1	Digital Photography (2.2) **Creating Media** • Recognise that different devices can be used to capture photographs • Experience capturing, editing, and improving photos. • Recognise that images seen may not be real. Prior Learning: 1.2 Future Learning:4.5	Robot Algorithms (2.3) **Programming A** • Develop an understanding of instructions in sequences • Use of logical reasoning to predict outcomes. • Use given commands in different orders to investigate how the order affects the outcome. • Design algorithms and then test those algorithms as programs and debug them. Prior Learning: 1.3 Future Learning: 3.3	Pictograms (2.4) **Data and Information** • Begin to understand what the term data means and how data can be collected in the form of a tally chart. • Learn the term 'attribute' and use this to help them organise data. • Present data visually using software. • Use data presented to answer questions Prior Learning: 1.4 Future Learning: 3.4	Digital Music (2.5) **Creating Media** • Use a computer to create music. • Listen to a variety of pieces of music and consider how music can make you feel. • Compare creating music digitally and non-digitally. • Look at patterns and purposefully create music. Prior Learning: 1.5 Future Learning:	Programming Quizzes (2.6) **Programming B** • Begin to understand that sequences of commands have an outcome • Make predictions • Use and modify designs to create quizzes in ScratchJr, • Evaluate work and make improvements to programming projects. Prior Learning: 1.1,2.1,1.6 Future Learning: 3.2 3.6
Year 3	Connecting Computers 3.1 **Computing Systems and Networks** • Develop their understanding of digital devices, with an initial focus on inputs, processes, and outputs. • Compare digital and non-digital devices. • An introduction to computer networks • Discover the benefits of connecting devices in a network. Prior Learning: 1.1,2.1 Future Learning: 4.1	Stop Frame Animation (3.2) **Creating Media** • Create a stop-frame animation using tablets • Apply skills to create a story-based animation. • Adding other types of media to their animation, such as music and text. Prior Learning: 1.1,2.1 Future Learning: 5.2	Sequencing Sounds (3.3) **Programming A** • Explore the concept of sequencing in programming through Scratch. • An introduction to the programming environment, • Make a representation of a piano. • Apply stages of program design. Prior Learning: 1.1, 1.3,1.6 2.1, 2.6	Branching Databases (3.4) **Data and Information** • Develop their understanding of what a branching database • Use yes/no questions how to use attributes to sort groups of objects. • Create physical and on-screen branching databases. • Create an identification tool using a branching database, • Consider real-world applications for branching databases. Prior Learning: 1.4, 2.4	Desktop publishing (3.5) **Creating Media** • Become familiar with the terms 'text' and 'images' and understand that they can be used to communicate messages. • Use desktop publishing software • Add text and images • Look at a range of page layouts • Evaluate how and why desktop publishing is used in the real world. Prior Learning: 1.2, 1.5, 2.2	Events and Actions in Programs (3.6) **Programming B** • Begin moving a sprite in four directions • Explore movement within the context of a maze • Draw lines with sprites and change the size and colour of lines. • Designing and coding their own maze-tracing program. Prior Learning: 1.3, 1.6 2.3, 2.6. 3.2 Future Learning: 4.3,4.6

Year 4	The Internet (4.1) **Computing Systems and Networks** • Appreciate the internet as a network of networks which need to be kept secure. • Learn that the World Wide Web is part of the internet • Evaluate online content to decide how honest, accurate, or reliable it is, and understand the consequences of false information. Prior Learning: 3.1,2.1,1.1 Future Learning: 5.1	Audio Production (4.2) **Creating Media** • Identify the input device (microphone) and output devices (speaker or headphones) required to work with sound digitally. • Discuss the ownership of digital audio and the copyright implications of duplicating the work of others. • Use Audacity to produce a podcast, which will include editing their work, and adding multiple tracks. • Evaluate their work and give feedback to their peers. Future Learning: 5.2	Repetition in Shapes (4.3) **Programming A** • Create programs by planning, modifying, and testing commands to create shapes and patterns. • Use Logo, a text-based programming language. Prior Learning: 1.1, 1.6 2.1, 2.6, 3.3 Future Learning: 4.6.5.3,5.6	Data Logging (4.4) **Data and Information** • Consider how and why data is collected over time. • Consider the senses that humans use environment and how computers can use special input devices called sensors to monitor the environment. • Collect and access data captured over long periods of time. • Look at data points, data sets, and logging intervals. • Review and analyse data. • Use data loggers to collect the data to answer questions. Prior Learning: 1.4, 2.4 Future Learning: 5.4, 6.4	Photo Editing (4.5) **Creating Media** • Develop an understanding of how digital images can be edited, and how they can then be resaved and reused. • Consider the impact that editing images can have, and evaluate the effectiveness of choices. Prior Learning: 2.2 Future Learning: 5.	Repetition in Games (4.6) **Programming B** • Explore the concept of repetition in programming using the Scratch environment. • Discover similarities between two environments. • Compare count-controlled and infinite loops. • Modify existing animations and games using repetition. • Design and create a game which uses repetition. Prior Learning: 1.3, 1.6 2.3, 2.6. 3.3, 3.6 Future Learning: 5.3,5.6
Year 5	Systems & searching (5.1) **Computing Systems and Networks** • Develop an understanding of computer systems and how information is transferred between systems and devices. • Consider small-scale systems as well as large-scale systems. • Discover how information is found on the World Wide Web	Video Production (5.2) **Creating Media** • Create short videos by working in pairs or groups. • As they progress through this unit, they will be exposed to topic-based language • Develop the skills of capturing, editing, and manipulating video. • Learners are guided with step-by-step support to take their	Selection in Physical Computing (5.3) **Programming A** • Explore the concept of selection in programming through the use of Crumble. • Use microcontroller and learn how to connect and program it. • Write algorithms and programs that utilises repitition. • Design and make a working model of a fairground carousel. Prior Learning: 1.1, 1.6 2.1,	Flat File Databases (5.4) **Data and Information** • Use tools within a database to order and answer questions about data. • Ccreate graphs and charts from their data to help solve problems. • Use a real-life database to answer a question, and present their work to others. Prior Learning: 3.4, 4.4	Introduction to Vector Graphics (5.5) **Creating media** • Start to create vector drawings. • Use different drawing tools to help create images. • Recognise that images in vector drawings are created using shapes and lines. • Layer objects and begin grouping and duplicating them to support the creation of	Selection in Quizzes (5.6) **Programming B** • Develop knowledge of 'selection' by revisiting how 'conditions' can be used in programming, and then • Learn how the 'if… then… else...' structure can be used to select different outcomes depending on whether a condition is 'true' or 'false'.

	• Learn how search engines work. • Compare different search engines. Prior Learning: 4.1,3.1,2.1,1.1 Future Learning: 5.1	idea from conception to completion. • At the conclusion of the unit, learners have the opportunity to reflect on and assess their progress in creating a video. Prior Learning:3.2, 4.5 Future Learning: 5.2	2.6, 3.3, 4.3, 4.6		more complex pieces of work. Prior Learning: 3.5	• Construct programs in the Scratch programming environment. • Design a quiz in response to a given task and implement it as a program. Prior Learning: 1.1, 1.6 2.1, 2.6, 3.3, 4.3, 4.6, 5.3
Year 6	Communication and Collaboration (6.1) **Computing Systems and Networks** • Explore how data is transferred over the internet. • Look at the makeup and structure of data packets. • Look at how the internet facilitates online communication and collaboration • Consider what should and should not be shared on the internet. Prior Learning: 5.1, 4.1,3.1,2.1,1.1	Web Page Creation (6.2) **Creating Media** • Create websites for a chosen purpose. • Identify what makes a good web page and use this information to design and evaluate a website using Google Sites. • Learn about copyright and fair use of media, the aesthetics of websites, and navigation paths. Prior Learning:2.2, 3.5, 4.5 5.2, 5.5	Variables in Games (6.3) **Programming A** • Find out what variables are and relate them to real-world examples. • Use variables to create a simulation of a scoreboard. • Experiment with variables in an existing project, then modify them, before creating a project. • Apply knowledge of variables and design to improve games in Scratch. Prior Learning: 3.3,3.6 4.3, 4.6 , 5.3, 5.6	Introduction to Spreadsheets (6.4) **Data and Information** • Organise data into columns and rows to create a data set. • Format data to support calculations • Use formulas to produce calculated data. • Apply formulas that include a range of cells, and apply formulas to multiple cells • Use spreadsheets to plan an event and answer questions. • Create charts, and evaluate results in comparison to questions asked. Prior Learning: 4.4, 5.4	3D Modelling (6.5) **Creating Media** • Develop knowledge and understanding of using a computer to produce 3D models. • Learners will initially familiarise themselves with working in a 3D space, moving, resizing, and duplicating objects. • Create hollow objects using placeholders and combine multiple objects to create a model of a desk tidy. • Examine the benefits of grouping and ungrouping 3D objects, • Plan, develop, and evaluate a 3D model of a building. Prior Learning:5.5	Sensing Movement (6.6) **Programming B** • Create a simple program within the new programming environment • Transferring work to a micro:bit. • Adding more depth to programs Prior Learning: 3.3,3.6,4.2,4.6,, 5.2 5.6 6.2