

Marriott Primary School Primary School

At Marriott we provide a Computing curriculum that leads to confident, independent learners who have a passion for learning and are able to adapt to the changing needs of the world. We want the children to work in ways which allows them to work collaboratively as well as independently and build their resilience. Computing prepares pupils to participate in a rapidly changing world in which they work and other activities are increasingly transformed by access to varied and developing technology. In an ever-changing society, there is an importance to use and apply skills to access remote learning, where appropriate. Pupils use ICT to find, explore, analyse, exchange and present information responsibly and creatively. On top of these, our lessons are linked to a Computational Thinking (CT), focusing on problem solving, in a systematic way with real life contexts. Bers, Seddighin, and Sullivan (2013) have argued that because technology is an integral part of children's experience, early childhood education should include the study of technology. Additionally, studies have shown that children as young as preschool-age (approximately 4) have been able to successfully learn basic CT concepts (Sullivan and Bers, 2016; Bers et al., 2014). Studies also show that learning this can be "an engaging and rewarding" experience for the students (Bers et al., 2014). Teaching computational thinking is one way to do just that. At Marriott, our Computing curriculum promotes initiative and independent learning, building on learning from previous year groups so they have a solid foundation of key skills to enable them to progress further through the key stages and beyond.

**** Bers, M.U., Seddighin, S., & Sullivan, A. (2013). Ready for robotics: Bringing together the T and E of STEM in early childhood teacher education. Journal of Technology and Teacher Education, 21(3), 355-377.**

Sullivan, A., & Bers, M.U. (2016). Robotics in the early childhood classroom: Learning outcomes from an 8-week robotics curriculum in pre-kindergarten through second grade. International Journal of Technology and Design Education, 26(1), 3-20. <https://edtechbooks.org/-LK>

Bers, M.U., Flannery, L., Kazakoff, E. R., & Sullivan, A. (2014). Computational thinking and tinkering?: Exploration of an early childhood robotics curriculum. Computers & Education, 72, 145-157. <https://edtechbooks.org/-HN>.

At Marriott in Computing, the main barriers for the children are a lack of life experiences and conceptual understanding of abstract ideas. On entry to EYFS, the pupil's weaknesses are that they will often not have the opportunity to have a range of different technology at home nor have the skills or level of understanding to conceptualise more complex topics. During discussions with the children, it is evident that there is an enjoyment for the subject; however, children are lacking in key skills, especially with problem solving and basic computer skills. The use of physical computing with ToodleBit will link to the children starting to develop the skills to access and thrive in technologically advanced jobs (e.g. robotics and STEM). Computing also ensures that pupils become digitally literate – able to use, and express themselves and develop their ideas through, information and communication technology – at a level suitable for the future workplace and as active participants in a digital world. By the end of Year 6, children should be confident in using Computational Thinking approaches to solve problems and use technology to create and adapt projects across a range of different technology. They also should have good digital literacy, in order for them to use technology, personally and academically, in a safe, effective and productive manner. In all subjects, children demonstrate a limited vocabulary compared to other children in more affluent communities. When encouraging children to ask key questions, they lack the ability to relate new experiences to previous learning. The majority of our parents do not have higher education qualifications and themselves are nervous of supporting their children with academic work. The school strives to instil within the children a sense of wonder, enthusiasm for learning and to question the world around them and the role they can play within it.

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Our 5 key themes for Computing are:				
Conflict	Inequality	Significance	Playing My Part	Success
<p><u>Computing Strands</u></p> <p>There are 3 strands of Computing in the National Curriculum (NC), each that link to specific objectives:</p> <ul style="list-style-type: none"> • Computer Science • Information Technology • Digital Literacy <p>Each unit of work will link to one of these 3 strands.</p> <p>See below how the NC objectives link to the different strands.</p> <p><u>Purple Mash</u></p> <ul style="list-style-type: none"> • As a school, we use PurpleMash to facilitate the majority of our Computing Curriculum. The units used will be noted. • Any additional resources to consolidate or add further knowledge will also be noted. <p><u>Key Skills/Non-Negotiables</u></p> <ul style="list-style-type: none"> • The key skills covered by each unit are noted in the objectives. <p>These are the skills that <u>must</u> be taught to ensure appropriate progression and skill acquisition between year groups, in line with age-appropriate expectations.</p>				

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KS1 Computing National Curriculum Objectives

Pupils should be taught to:

- understand what algorithms are, how they are implemented as programs on digital devices, and that programs execute by following precise and unambiguous instructions
- create and debug simple programs
- use logical reasoning to predict the behaviour of simple programs
- use technology purposefully to create, organise, store, manipulate and retrieve digital content
- recognise common uses of information technology beyond school
- use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies

KS2 Computing National Curriculum Objectives

Pupils should be taught to:

- design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts
- use sequence, selection, and repetition in programs; work with variables and various forms of input and output
- use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs
- understand computer networks, including the internet; how they can provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration
- use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content
- select, use and combine a variety of software (including internet services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information
- use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact

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Computing progression within EYFS

Evidence of learning within Computing may be found with the following Early Learning Areas:		
Understanding of the world	30 -50 months	<ul style="list-style-type: none"> To know how to operate simple equipment. To show an interest in technological toys with knobs or pulleys, or real objects. To show skill in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images. To know that information can be retrieved from computers.
	40 - 60 months	<ul style="list-style-type: none"> To complete a simple program on a computer. To interact with age-appropriate computer software.
	ELG	<ul style="list-style-type: none"> To recognise that a range of technology is used in places such as homes and schools. To select and use technology for particular purposes.

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Computing progression of skills Year 1

Key Area:	Key Themes: Success	Autumn 1 – How do I do work on a computer?
<u>Digital Literacy</u>	<ul style="list-style-type: none"> - To log into an account safely (PurpleMash and ClassDojo) - To respond to a teacher's task on ClassDojo - To use common icons (e.g. Save, Print, Open, New) - To use icons to find appropriate resources - To find saved work and other resources - To start to add pictures and text to work - To exploring different programs and games - To understand the importance of logging out and to log out safely (PurpleMash and ClassDojo) 	<u>Unit 1.1 Online Safety & Exploring Purple Mash</u> Links EYFS 40 - 60 months Vocabulary: Log In – Accessing a computer system Username – A name to access a system Password – A special word or phrase to keep us safe Log Out – Leaving a computer system safely
	Resources:	

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	Purple Mash – 2Explore, 2Count, 2Connect, 2Paint	
Key Area:	Key Themes: Significance	Autumn 2 – How can I use data to help me to solve problems?
<u>Computer Science</u>	<ul style="list-style-type: none"> - To sort items using criteria - To group items using criteria 	<u>Unit 1.2 Grouping & Sorting</u> Links EYFS ELG Vocabulary: Sort – put similar things together Criteria – a way to judge something
<u>Information Technology</u>		<u>Unit 1.3 Pictograms</u> Links EYFS ELG Vocabulary: Data – Facts that can give information Pictogram – A diagram that uses pictures for data
<u>Computer Science</u>		<u>Unit 1.4 Lego Builders</u> Links EYFS 40 - 60 months Vocabulary: Instruction –How to do something Algorithm – Step-by-step instructions Computer – An electronic device Program (verb) – To give coded instructions to a computer Debug – To find and remove errors
	<u>Resources:</u>	

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	Unit 1.2 – 2DoItYourself	Unit 1.3 – 2Count, 2Connect	Unit 1.4 – 2Paint
Key Area:	Key Themes: Conflict and Inequality		Spring 1 – What can I do when things go wrong?
<u>Computer Science</u>	<ul style="list-style-type: none"> - To create and debug a set of instructions - To change and extend algorithms - To share algorithms with peers 		<u>Unit 1.5 Maze Explorers</u> Links EYFS 30 - 50 months Vocabulary: Direction – A course along which something moves Instruction –How to do something Algorithm – Step-by-step instructions Undo – To cancel or reverse an instruction Debug – To find and remove errors <u>Unit 1.8 Spreadsheets</u> Links EYFS ELG Vocabulary: Spreadsheet – A program that shows data in rows and columns Data – Facts that can give information Cell – A section of the spreadsheet grid with data in Row – Cells in a spreadsheet that go from left to right Column – Cells in a spreadsheet that go from top to bottom
<u>Information Technology</u>	<ul style="list-style-type: none"> - To understand rows and columns - To use save and open function - To enter data into a spreadsheet cell - To move and locks cells - To use ‘count’ and ‘speak’ tool 		
	Resources: Unit 1.5 – 2Go Unit 1.8 – 2Calculate		
Key Area:	Key Themes: Playing My Part		Spring 2 – Can I be creative with technology?
<u>Information Technology</u>	<ul style="list-style-type: none"> - To know the difference between traditional book and e-book - To add and edit text and pictures - To add animation and sound - To record own voice and music - To save and open previous work - To share work on a shared platform 		<u>Unit 1.6 Animated Story Books</u> Links EYFS ELG Vocabulary: E-Book – A book that can be read on a computer or tablet Animation – Making drawings and pictures move Image – A picture Background – An image that is behind others
	Resources: Unit 1.6 – 2CreateAStory		

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Key Area:	Key Themes: Significance and Success	<u>Summer 1 – How can I get this BeeBot to move where I want?</u>
<u>Computer Science</u>	<ul style="list-style-type: none"> - To build one and two step instructions using printable code cards - To explain what a block of code is - To read through combined blocks of code - To create background and characters - To design and execute a simple program, using inputs and outputs - To create and debug simple programs - To use logical reasoning to predict the behaviour of simple programs 	<u>Unit 1.7 Coding</u> Links EYFS 40 - 60 months Vocabulary: Input – Information that goes into a computer Output – Information that the computer does, based on an input Debug – To find and remove errors
	Resources: Unit 1.7 –BeeBots	
Key Area:	Key Themes: Playing My Part	<u>Summer 2 – What technology is there at home and school?</u>
<u>Digital Literacy</u>	<ul style="list-style-type: none"> - To understand the term ‘technology’ - To consider types of technology inside and outside of school - To record examples of technology outside of school 	<u>Unit 1.9 Technology outside school</u> Links EYFS ELG Vocabulary: Technology – Device or tools that make people’s lives easier Games console – something to play video games on Microwave – something that heats up food Washing machine – something that washes your clothes
	Resources: Unit 1.7 – 2PublishPlus	

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Computing progression of skills Year 2

Key Area:	Key Themes: Conflict	<u>Autumn 1 - How can I make things work when they go wrong?</u>
<u>Computer Science</u>	<ul style="list-style-type: none"> - To understand the term 'algorithm' - To create a program using simple algorithms - To compare 'objects' within code - To use the 'repeat' and 'timer' command - To understand the term 'debugging' - To make predictions and analyse own code and code of others - To plan and use algorithms to achieved a 'desired result' 	<u>Unit 2.1 Coding (BeeBots to be used as part of this unit)</u> Links Yr 1 – Unit 1.7 Coding Vocabulary: Instruction –How to do something Algorithm – Step-by-step instructions Repeat – To do something more than once Direction – The way something moves
	<u>Resources:</u> Unit 2.1 - BeeBots	
Key Area:	Key Themes: Significance	<u>Autumn 2 – How can I share things clearly to someone else?</u>

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Information Technology	<ul style="list-style-type: none"> - To use 'copy' and 'paste' tool - To use 'total' tool - To insert images (coins) in a spreadsheet - To create table of data - To create block graph 	<u>Unit 2.3 Spreadsheets</u> Links Yr 1 - Unit 1.8 Spreadsheets Vocabulary: Spreadsheet – A program that shows data in a grid in rows and columns Cell – A section of the spreadsheet grid with data in Row – Cells in a spreadsheet that go from left to right Column – Cells in a spreadsheet that go from top to bottom Copy and Paste – Moving something from one place to another
Information Technology	<ul style="list-style-type: none"> - To understand that digital content may be represented in many forms - To create a quiz about a story - To talk about work and alter based on feedback - To add appropriate pictures/clip-art and information - To use a variety of software to manipulate content - To present digital content to others 	<u>Unit 2.8 Presenting Ideas</u> Links Yr 1 - Unit 1.6 Animated Stories Vocabulary: Animation – Making drawings and pictures move Present – To share and explain things with others Quiz – Something used to test your knowledge
	<u>Resources:</u> Unit 2.3 – 2Calculate Unit 2.8 – 2CreateAStory, 2Quiz, 2Publish, 2Connect	

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Key Area:	Key Themes: Playing My Part	<u>Spring 1</u> - Is it important what I send to others on the Internet?
<u>Digital Literacy</u>	<ul style="list-style-type: none"> - To use search tools and refine information - To understand approval of content by others - To understand how to use, open and send emails - To discuss own experiences and what makes them happy or sad - To understand the term 'digital footprint' - To be able to identify steps to keep data and information secure online 	<u>Unit 2.2 Online Safety</u> Links Yr 1 - Unit 1.1 Online Safety & Exploring Purple Mash Vocabulary: Internet – A way to send information from one computer to another anywhere in the World Search – To look up information in a database or Internet Email – Messages sent from one computer to others Digital Footprint – The information that we put on the Internet, based on what we do
	<u>Resources:</u> Unit 2.2 – 2Email	

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Key Area:	Key Themes: Significance and Success	<u>Spring 2 – Can I ask a computer questions to find some data?</u>
Information Technology	<ul style="list-style-type: none"> -To use 'Yes' or 'No' questions to separate information - To understand the term 'binary tree' - To understand the limitations of pictograms and binary trees - To use a binary tree to sort pictures - To understand the term 'database' - To use a database to answer simple and more complex search questions 	<u>Unit 2.4 Questioning</u> Links Yr 1 – Unit 1.3 Pictograms Vocabulary: Binary Tree – A simple way of sorting information into two categories Database – A computerised system that makes it easy to find and store information Complex – The opposite of simple
	<u>Resources:</u>	

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	Unit 2.4 – 2Question, 2Investigate, 2Count	
Key Area:	Key Themes: Playing My Part	Summer 1 - How do I look something on the Internet?
Information Technology/Digital Literacy	<ul style="list-style-type: none"> - To understand the meaning of key internet terms - To identify basic parts of a web search engine - To use information from a web search results page - To search for answers, using search engines 	Unit 2.5 Effective Searching Links Yr 1 – Unit 1.9 Technology Outside School Vocabulary: Internet – A network that helps you to send information from one computer to another anywhere in the World World Wide Web - The world wide web ('www' or 'web' for short) is a collection of webpages found on this network of computers Website - A location on the World Wide Web, consisting of one or more Web pages accessible at a single address Search – To look up information in a database or Internet Search Engine – A program that searches for information on a database or the Internet

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	<u>Resources:</u> Unit 2.5 – Various Search Engines (e.g. Google, Bing, Yahoo)	
Key Area:	Key Themes: Inequality and Success	Summer 2 – How can I create art with a computer?
Information Technology	<ul style="list-style-type: none"> - To use simple drawing tools - To open and use clipart - To resize drawing tools - To use 'fill' tool - To explore and use repeating patterns - To edit and improve work based on feedback 	<u>Unit 2.6 Creating Pictures</u> Links Yr 1 – Unit 1.6 Animated Story Books Vocabulary: Template – A given example to use or change Upload – To put your work onto a computer system for someone else to see Clipart – Simple pictures and symbols Tool – Part of a program that you use Resize – To make something bigger or smaller Fill – To make something fuller
	<u>Resources:</u> Unit 2.6 – 2PaintAPicture	

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Computing progression of skills Year 3

Key Area:	Key Themes: Playing My Part	<u>Autumn 1 – How can I use technology to talk to my friends?</u>
Digital Literacy	<ul style="list-style-type: none"> - To highlight strengths and weaknesses of different methods of communication - To open and respond to series of emails - To write rules on how to stay safe using email - To explore scenarios involving real life applications - To attach appropriate files to emails - To understand the term 'CC' and how to use it 	<u>Unit 3.5 Email (including email safety)</u> Links Yr 2 – Unit 2.2 Online Safety Vocabulary: Attachment – A file that is sent with an email Address Book – A list of people who you regularly contact
	<u>Resources:</u> Unit 3.5 – 2Email, 2Connect, 2DoltYourself	
Key Area:	Key Themes: Conflict	<u>Autumn 2 – Is everything in Computing always true?</u>

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Information Technology	<ul style="list-style-type: none"> - To create a table of data - To create charts and graphs from data - To use 'more than', 'less than' and 'equals' tools - To describe a cell location on a spreadsheet - To find specific locations in a spreadsheet 	Unit 3.3 Spreadsheets Links Yr 2 – Unit 2.3 Spreadsheets Vocabulary: Spreadsheet – A program that shows data in a grid in rows and columns Cell – A section of the spreadsheet grid with data in Row – Cells in a spreadsheet that go from left to right Column – Cells in a spreadsheet that go from top to bottom
Information Technology	<ul style="list-style-type: none"> - To understand the names of fingers - To understand the terms 'top row', 'home row', 'bottom row' and 'top row' - To use two hands to type on the keyboard - To type individual and series of words with speed and accuracy 	Unit 3.4 Touch Typing Links Yr 2 – Unit 2.5 Effective Searching Vocabulary: Top Row Keys – The keys on the top row of the keyboard Home Row Keys – The keys on the middle row of the keyboard Bottom row keys – The keys on the bottom row of the keyboard Space bar – The bar at the bottom of the keyboard
	Resources: Unit 3.3 - 2Calculate Unit 3.4 – 2Type	
Key Area:	Key Themes: Significance and Conflict	<u>Spring 2 – Is there a way to show data clearly?</u>

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Information Technology	<ul style="list-style-type: none"> - To use 'YES' and 'NO' questions - To contribute to shared branching database - To create own branching database - To select and save appropriate images - To use and debug own branching database 	<p><u>Unit 3.6 Branching Databases</u></p> <p>Links Yr 2 – Unit 2.4 Questioning</p> <p>Vocabulary:</p> <p>Branching Database – Uses “yes” and “no” questions to sort information</p> <p>Criteria – A rule by which something is judged</p> <p>Classify – To arrange in groups based on similarities</p>
	<p><u>Resources:</u></p> <p>Unit 3.6 – 2Question</p>	

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Key Area:	Key Themes: Significance	<u>Summer 1 – What different ways can I show data on a computer?</u>
Information Technology	<ul style="list-style-type: none"> - To set up graph with a given number of fields - To enter data for a graph - To share graphs on shared platform - To use graphs in a range of contexts - To present results in a range of graphical formats 	<u>Unit 3.8 Graphing</u> Links Yr 2 – Unit 2.4 Questioning Vocabulary: Graph – A way to show data visually Bar Chart – A graph where data is represented by bars Block Graph – A graph where data is represented by blocks Line Graph – A graph where data is represented by a line and points on a line
	<u>Resources:</u> Unit 3.8 – 2Graph	

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Key Area:	Key Themes: Inequality	<u>Summer 2 – How can simulations be useful?</u>
Information Technology	<ul style="list-style-type: none"> - To identify examples of different simulations (real or imaginary situations) - To give examples of simulations from own knowledge - To suggest advantages and disadvantages of simulations - To use simulation to test predictions - To evaluate simulations, based on real life contexts and usefulness - To recognise patterns within simulations 	<u>Unit 3.7 Simulations</u> Links Yr 2 – Unit 2.8 Presenting Ideas Vocabulary: Simulation – A computerised model of a real-life situation Problem – Something that has gone wrong Solution – Finding the answer to a problem Real Life – The world we live in as humans
	<u>Resources:</u> Unit 3.7 – 2Simulate	

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Computing Progression of skills Year 4

Key Area:	Key Themes: Insignificance and Success	<u>Autumn 1 – How can I make things easier?</u>
Information Technology	<ul style="list-style-type: none"> - To produce physical and digital animation - To use 'onion skin' tool - To add backgrounds and sounds - To understand the term 'stop motion animation' - To create own stop motion animation 	<u>Unit 4.6 Animation</u> Links Yr 2 – Unit 2.6 Creating Pictures Vocabulary: Animation – A process that makes still pictures appear to move Frame – A single image in an animation Onion Skinning – A process where you show the previous frames image in the current frame <u>Unit 4.7 Effective Searching</u> Links Yr 2 – Unit 2.5 Effective Searching Vocabulary: World Wide Web - The world wide web ('www' or 'web' for short) is a collection of web pages found on this network of computers Search Engine – A program that searches for information on a database or the Internet
Digital Literacy	<ul style="list-style-type: none"> - To structure search queries to locate specific information - To use search technology to answer a series of questions - To write own search questions for others - To analyse web pages for credibility of information 	
	<u>Resources:</u> Unit 4.6 – 2Animate	
Key Area:	Key Themes: Playing My Part and Conflict	<u>Autumn 2 – What can I change to make things my own?</u>
Information Technology	<ul style="list-style-type: none"> - To use text formatting to fit for purpose and audience - To interpret variety of communications to include in report - To create a mind-map - To use ideas from mind-map to structure writing - To assess if final work produced is appropriate 	<u>Unit 4.4 Writing for Different Audiences</u> Links Yr 3 – Unit 3.4 Touch Typing Vocabulary: Font – The style of writing you can use Bold – To make text thicker to stand out Italic – To make the text at an angle

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		Underline – To draw a line underneath the text
	Resources: Unit 4.4 – 2PublishPlus, 2Simulate Unit 4.5 – 2Logo	
Key Area:	Key Themes: Success and Conflict	<u>Spring 1 – What can I use inputs and outputs for?</u>
Computer Science	<ul style="list-style-type: none"> - To sequence steps correctly to create a song - To use physical inputs and outputs - To use variables to store and manipulate data - To use “If/Else” commands when coding - To plan, test and debug own coding creation 	<u>ToodleBit Unit 3 and 4</u> Links Yr 3 – ToodleBit Unit 1 and 2 Vocabulary: Algorithm – Step-by-step instructions followed by a computer Sequences – The order a set of instructions needs to be in Repetition – Repeating a task over and over again Selection – A choice that will help to make a decision Input – Information that goes into a computer Output – Information that the computer does, based on an input
	Resources: ToodleBit Unit 3 and 4 – Micro:Bit, USB Cable, Computer, Clips, LEDs	
Key Area:	Key Themes: Insignificance	<u>Spring 2 – How can spreadsheets be helpful?</u>
Information Technology	<ul style="list-style-type: none"> - To use number formatting tools - To add a formula cell to automatically make calculation - To use ‘timer’, ‘random number’ and ‘spin’ tools to create fun ways to explore number - To use a series of data to create a line graph - To make practical use of a spreadsheet (e.g. budgeting) - To convert between currencies using spreadsheet 	<u>Unit 4.3 Spreadsheets</u> Links Yr 3 – Unit 3.3 Spreadsheets Vocabulary: Formula – An instruction to perform a mathematical equation from Line Graph – A type of chart used to show information over time using straight lines

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	- To use images within spreadsheet in cross-curricular context (e.g. place value)	Shortcut – A combination of keys pressed to perform a specific outcome Efficient – Functioning in the best possible manner with the least waste of time and effort
	Resources: Unit 4.3 – 2Calculate	
Key Area:	Key Themes: Inequality and Conflict	<u>Summer 1 – Is everything online safe?</u>
Digital Literacy	<ul style="list-style-type: none"> - To understand security symbols online (e.g. padlock) - To understand the term 'phishing' and be aware of scam websites - To explain how a digital footprint can link to identity theft - To identify risks of installing paid and free software - To understand the terms 'malware' and 'virus' - To understand the term 'plagiarism' - To understand the difference between using information and copying information 	<u>Unit 4.2 Online Safety</u> Links Yr 3 – Unit 3.2 Online Safety Vocabulary: Email – Messages sent from one computer to others Computer Virus – A piece of code that can damage a computer system Cookies – A small amount of data from a website to remember the user

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	- To understand positive and negative influences of technology on wider world	Phishing – Sending emails pretending to be a real company to gain information Malware – A program designed to gain unauthorised access to a system Plagiarism – When you use someone else’s work as your own
	Resources: Unit 4.2 – 2Connect, 2Investigate	
Key Area:	Key Themes: Playing My Part	Summer 2 – What is a computer made of?
Computer Science	- To name different parts of a desktop computer - To understand function of different parts of a computer	Unit 4.8 Hardware Investigators Links Yr 1 – Unit 1.9 Technology Outside School Vocabulary: Motherboard – A printed circuit board containing the main parts of a computer CPU – A computer’s operations are controlled here RAM – allows programs to store memory

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		Graphics Card – A printed circuit board that puts outputs on a monitor Monitor – A computer screen Network Card – A device that allows you to connect to a network
	Resources: Unit 4.8 – 2Connect, 2Quiz	

Computing Progression of skills Year 5

Key Area:	Key Themes: Significance	Autumn 1 – Is data always in the right place?
Information Technology	<ul style="list-style-type: none"> - To understand different ways to search a database - To use 'find' tool to search for specific information - To use 'sort', 'group' and 'arrange' tool - To view data in different tables, based on clarity - To use 'statistics' and 'report' tool to find statistical information about a database 	Unit 5.4 Databases Links Yr 3 – Unit 3.6 Branching Databases Vocabulary: Database – A computerised system that makes it easy to find and store information

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		Criteria – Specific information to decide something Sort – To put information into a specific order Group – To put information into specific groups Arrange – To reorder information into a clearer format
	<u>Resources:</u> Unit 5.4 – 2Investigate	
Key Area:	Key Themes: Success	<u>Autumn 2 – How can I record information clearly?</u>
Information Technology	<ul style="list-style-type: none"> - To record information visually - To understand the terms ‘concept maps’, ‘stage’, ‘nodes’ and ‘connections’ - To create a basic concept map - To work collaboratively with others to create a concept map 	<u>Unit 5.7 Concept Maps</u> Links Yr 4 – Unit 4.4 Writing For Different Audiences Vocabulary: Concept Map – A tool for organising and representing knowledge clearly Stage – Where the concept map is Node – A piece of information in a concept map

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		Connections – The links between the nodes in a concept map
	Resources: Unit 5.7 – 2Connect	
Key Area:	Key Themes: Conflict and Playing My Part	<u>Spring 1 – Is everything positive online?</u>
Digital Literacy	<ul style="list-style-type: none"> - To know who to tell if something online upsets them - To understand and use SMART rules - To think critically about what they share online - To understand how image manipulation can have advantages and disadvantages - To understand importance of citing sources when researching - To use keywords and search techniques to find relevant information 	<u>Unit 5.2 Online Safety</u> Links Yr 4 – Unit 4.2 Online Safety Vocabulary: Password – A secret phrase, made up of letters, numbers or symbols, used to keep your account safe Identity Theft – Using another personal's information to obtain something (e.g. money)

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Information Technology	<p>- To understand advantages and disadvantages of different forms of communication</p> <p>- To use different viewpoints in 3D modelling software</p> <p>- To adapt a 3D model by altering points to create own version</p> <p>- To edit and design 3D model for a purpose</p> <p>- To print own design as 2D net and create 3D model</p>	<p>Plagiarism – When you use someone else’s work and pass it off as your own</p> <p>Reputation – How trusted a source/website is to be true and factual</p> <p><u>Unit 5.6 3D Modelling</u></p> <p>Links Yr 4 – Unit 4.6 Animation</p> <p>Vocabulary:</p> <p>3D View – A way to show a model in 3-dimensions</p> <p>Net – A 3D model, flattened into a 2D representation</p> <p>3D Printer – A machine that prints 3D model from computer plans</p>
	<p><u>Resources:</u></p> <p>Unit 5.6 – 2DIY</p>	
Key Area:	Key Themes: Success and Conflict	<u>Spring 2 – How can I make my code more efficient?</u>
Computer Science	<p>- Use Computational Thinking vocabulary and apply them to simulate real life scenarios</p> <p>- To understand how different types of data is stored on a computer</p> <p>- To understand how computers in a network communicate</p> <p>- To control a loop using ‘while’ and ‘forever’ coding blocks</p> <p>- To recap on using ‘If/Else’ commands when coding</p> <p>- To recap on using variables and physical input/outputs</p> <p>- To use ‘For’ and ‘If/Then’ coding blocks</p>	<p><u>ToodleBit Unit 5 and 6</u></p> <p>Links Yr 4 – ToodleBit Unit 3 and 4</p> <p>Vocabulary:</p> <p>Decomposition - The process of breaking down a problem into smaller parts</p> <p>Generalisation - A way of quickly solving new problems based on previous problems we have solved</p>

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		<p>Simulator – A piece of equipment that is designed to represent real conditions</p> <p>Condition – Something agreed upon or necessary if some other things is to take place</p>
	<p>Resources: ToodleBit Unit 5 & 6 – Micro:Bit, USB Cable, Buggy Robot</p>	
Key Area:	Key Themes: Playing My Part and Inequality	Summer 1 – What makes a good computer game?
Computer Science/Information Technology	<ul style="list-style-type: none"> - To review and analyse a computer game - To design own computer game, based on selected theme - To upload images or use drawing tools to create game environment - To design characters and include animation and sounds - To select appropriate options to make unique game and maximise playability - To evaluate own and peers' games to help improve design 	<p>Unit 5.5 Game Creator</p> <p>Links Yr 1 – Unit 1.5 Maze Explorers</p> <p>Vocabulary:</p> <p>Interactive – When a program responds to a user's input</p> <p>Playability – The quality and ease of how a game can be played</p>

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		Texture – High detail in a computer graphic Customise – To modify something to make it your own
	<u>Resources:</u> Unit 5.5 – 2DIY3D	
Key Area:	Key Themes: Significance and Success	<u>Summer 2 – How can I use a spreadsheet across the curriculum?</u>
Information Technology	<ul style="list-style-type: none"> - To create formula in spreadsheet to convert between units of measure - To use 'how many' tool in different context within spreadsheet - To use 'advanced mode' to produce formulae that solves mathematical equations (e.g. finding area) - To use spreadsheet to model a real-life situation and come up with solutions that can be practically applied (e.g. budgeting, shopping etc) 	<u>Unit 5.3 Spreadsheets</u> Links Yr 4 – Unit 4.3 Spreadsheets Vocabulary: Hypothesis – A prediction or a possible explanation for a question that needs to be investigated Produce – To come up with

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		Convert – To change from one thing to another Budgeting – Understanding how much money you have and how much you spend
	<u>Resources:</u> Unit 5.3 – 2Calculate	

Computing Progression of skills Year 6

Key Area:	Key Themes: Playing My Part and Success	<u>Autumn 1 – How can I design a quiz for younger children?</u>
Information Technology	<ul style="list-style-type: none"> - To use software appropriately to create work meant for a specific audience (e.g. younger children) - To share quiz with peers and edit and improve, based on feedback - To design own quiz that requires user to search a database 	<u>Unit 6.7 Quizzing</u> Links Yr 5 – Unit 5.4 Databases Vocabulary: Audience – The people that you’re making something for

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		<p>Collaboration – Working with someone else</p> <p>Concept Map – A tool for organising and representing knowledge clearly</p> <p>Database – A computerised system that makes it easy to find and store information</p> <p>Quiz – Something used to test your knowledge, usually for entertainment</p>
	<p>Resources: Unit 6.7 – 2Quiz, 2Investigate, 2Connect, 2DIY</p>	
Key Area:	Key Themes: Playing My Part and Significance	Autumn 2 – How am I connected to others online?
Computer Science	<p>- To know the different between the 'World Wide Web' and the 'Internet'</p> <p>- To understand their own school network</p> <p>- To use search technology effectively to find out information on specific people</p> <p>- To consider major changes in technology in the past, present and future</p>	<p>Unit 6.6 Networks Links Yr 4 – Unit 5.4 Databases</p> <p>Vocabulary: Internet – A network that helps you to send information from one computer to another anywhere in the World</p>

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<p>Computer Science/Digital Literacy/Information Technology</p>	<ul style="list-style-type: none"> - Work collaboratively with others to research and plan a blog - Use software to create a blog, with focus to varying audiences - Understand that blogs need to be maintained regularly - Post comments and blog posts on existing blogs - Understand approval process of comments - Demonstrate awareness of issues surrounding inappropriate posts and cyberbullying - Assess effectiveness and impact of a blog 	<p>World Wide Web - The world wide web ('www' or 'web' for short) is a collection of webpages found on this network of computers</p> <p>Network – Several interconnected devices</p> <p>Router – A device that forwards data over a network</p> <p>Local Area Network (LAN) – A network that linked devices within a building</p> <p>Wide Area Network (WAN) - A network that linked devices over long distances</p> <p><u>Unit 6.4 Blogging</u></p> <p>Links Yr 2 – Unit 2.8 Presenting Ideas</p> <p>Vocabulary:</p> <p>Blog – A regularly updated, informal webpage</p> <p>Audience – The people that you're making something for</p> <p>Approval – The action of saying something is good or acceptable</p> <p>Cyberbullying – Bullying that happens through electronic communication</p>
	<p><u>Resources:</u></p> <p>Unit 6.6 – Hardware from Networks Unit 6.4 – 2Blog</p>	
<p>Key Area:</p>	<p>Key Themes: Success</p>	<p><u>Spring 1 – Does a game need pictures?</u></p>
<p>Computer Science/Information Technology</p>	<ul style="list-style-type: none"> - To understand the term 'text adventure' - To use different programs to effectively plan and create their text adventure - To debug their work accurately and effectively - To use others' work to adapt own - To use 'functions' command 	<p><u>Unit 6.5 Text Adventures</u></p> <p>Links Yr 5 – ToodleBit Unit 5 and 6</p> <p>Vocabulary:</p> <p>Concept Map – A tool for organising and representing knowledge clearly</p>

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	- To use 'if/else' statements and 'repeat' statements	<p>Debug – To spot and correct errors in code</p> <p>Sprite – A computer graphic that can be moved on-screen</p> <p>Text adventure – A computer game that uses text instead of graphics</p> <p>Function – A piece of code that can be used to perform a task easily</p>
	<p>Resources:</p> <p>Unit 6.5 – 2CreateAStory, 2Connect</p>	
Key Area:	Key Themes: Playing My Part and Inequality	Spring 2 – Can spreadsheets help me in every day life?
Information Technology	<ul style="list-style-type: none"> - To use 'copy' and 'paste' shortcuts effectively - To use 'count' tool to solve a problem - To use formula wizard to create formulae - To use spreadsheet to solve range of real-life problems 	<p>Unit 6.3 Spreadsheets</p> <p>Links Yr 5 – Unit 5.3 Spreadsheets</p> <p>Vocabulary:</p> <p>Database – A computerised system that makes it easy to find and store information</p>

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		Criteria – Specific information to decide something Sort – To put information into a specific order Group – To put information into specific groups Arrange – To reorder information into a clearer format Copy and Paste – Moving something from one place to another Formula – An instruction to perform a mathematical equation from
	Resources: Unit 6.3 – 2Calculate	
Key Area:	Key Themes: Conflict	Summer 1 – How can I be responsible online?
Computer Science/Digital Literacy/Information Technology	- To identify benefits and risks of mobile devices and other software broadcasting location of user - To understand the term ‘digital footprint’ and understand how people use information to create ‘online presence’ - To understand consequences of promoting inappropriate content and how to put a stop to it	Unit 6.2 Online safety Links Yr 5 – Unit 5.2 Online Safety Vocabulary: Digital Footprint – The information that we put on the Internet, based on what we do

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	<p>- To understand importance of balancing game and screen time with other parts of life</p> <p>- To share opinions about advantages and disadvantages of technology and how technology affects health and the environment</p>	<p>Password – A secret phrase, made up of letters, numbers or symbols, used to keep your account safe</p> <p>PEGI Rating – A rating that shows what age something is suitable for</p> <p>Screen Time – How long someone spends on a device</p> <p>Spoof website – A dishonest website designed into tricking the user into thinking that it represents the truth</p>
	<p>Resources:</p> <p>Unit 6.2 – 2Investigate, 2DIY, 2DIY3D</p>	
Key Area:	Key Themes: Success and Conflict	Summer 2 -
Computer Science/Information Technology	<p>- Use Computational Thinking vocabulary and apply them to simulate more complex real life scenarios</p> <p>- To use decomposition within real life coding problems</p> <p>- To understand and use 'arrays'</p>	<p>ToodleBit Unit 7 and 8</p> <p>Links Yr 5 – ToodleBit Unit 5 and 6</p> <p>Vocabulary:</p> <p>Sequences – A set of related events that follow each other in a particular order</p>

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		<p>Array – A group of related data values (called elements) that are grouped together</p> <p>Detect – To discover or identify that something is there.</p> <p>Statement – An instruction or command in writing</p> <p>Anemometer – A device that measures the speed of wind</p> <p>Sensor – A device which detects or measures a physical property or records, indicates or responds to it</p>
	<p><u>Resources:</u> ToodleBit Unit 7 and 8 – Micro:Bit, USB cables</p>	

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