



Milby Primary School



Computing – whole school overview

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 1	<u>Unit 1 – online safety and exploring Purple Mash</u> - Children can safely log in to Purple Mash using their own login. - Children can find work that is save in the “online work” area of Purple Mash. - Children can search Purple Mash to find resources. - Children explore the “tools” and “games” sections on Purple Mash and look at “Table Toons” (2 x table game). - Children understand the importance of logging out. <u>Unit 2 – grouping and sorting</u> - Children can sort various items offline using a variety of criteria. - Children can sort various items online using a variety of criteria.	<u>Unit 3 – pictograms</u> - Children understand that data can be represented in picture format. - Children contribute to a class pictogram. - Children can represent results as a pictogram. <u>Unit 4 – Lego builders</u> - Children can compare the effects of adhering strictly to instructions to completing tasks without complete instructions. - Children can follow and create simple instructions on a computer. - Children can consider how the order of instructions affects the result.	<u>Unit 5 – maze explorers</u> - Children understand the functionality of the direction keys. - Children understand how to create and debug a set of instructions (algorithm). - Children can use the additional direction keys as part of an algorithm. - Children understand how to change and extend the algorithm list. - Children set challenges for their peers.	<u>Unit 6 – animated story books</u> - Children can use the different drawing tools to create a picture on a page and add text. - Children can add an animation to a page. - Children can add sounds and voice recordings. - Children can add backgrounds to pages. - Children can use the copy and paste function to add more pages to their animated e-book.	<u>Unit 7 – coding</u> - Children understand what instructions are and predict what might happen. - Children can use code to make a computer program. - Children understand what ‘object’ and ‘actions’ are. - Children understand what an event is. - Children begin to understand how code executes when a program is run. - Children understand what ‘backgrounds’ and ‘objects’ are. - Children can plan and make a computer program.	<u>Unit 8 – spreadsheets</u> - Children can locate 2Calculate. - Children can enter data into spreadsheet cells. - Children can use 2Calculate image tools to add clipart to cells. - Children can use 2Calculate control tools: lock, move cell, speak and count. <u>Unit 9 – technology outside school</u> - Children to walk around the local community and find examples of where technology is used. - Children to record examples of technology outside school.

Year 2	<u>Unit 1 – coding</u> - Children understand what an algorithm is and can create a simple computer program using an algorithm. - Children can understand the collision detection event. - Children can design an algorithm that follows a timed sequence. - Children understand that different objects have different properties and understand what different events do in code. - Children understand and can debug simple programs.	<u>Unit 2 – online safety</u> - Children can use search facilities to refine searches on Purple Mash. - Children are beginning to understand that information can be shared globally. - Children can use 2Respond to open and send emails in a safe manner. - Children can explain what digital footprint is and give examples of what they would not want in their digital footprint. - Children can identify the steps that can be taken to keep personal data and hardware secure.	<u>Unit 3 – spreadsheets</u> - Children can use 2Calculate image, lock, move, cell, speak and count tools. - Children can copy and paste in 2Calculate. - Children can use the totalling tools. - Children can use the 2Calculate equals tool to check calculations. - Children can use 2Calculate to collect data and produce a graph. <u>Unit 4 – questioning</u> - Children can use a range of yes/no questions to separate information. - Children can use a binary tree to answer ‘yes’ and ‘no’ questions. - Children can use a database to answer more complex questions.	<u>Unit 5 – effective searching</u> - Children understand the terminology associated with searching. - Children gain a better understanding of searching on the internet. - Children can create a leaflet to help someone search for information on the internet.	<u>Unit 6 – creating pictures</u> - Children can use the functions in 2Paint. - Children can recreate a picture based on different styles (impressionism, pointillism, William Morris, surrealism, etc). - Children can describe the main features of Piet Mondrian’s and William Morris’s style. <u>Unit 7 – making music</u> - Children can use sounds within 2Sequence to create a tune. - Children can edit and refine composed music. - Children can upload a sound from a bank of sounds. - Children can add sounds to a tune they have already created to change it. - Children can create their own sounds and upload those to use within their tunes.	<u>Unit 8 – presenting ideas</u> - Children can explore how a story can be presented in different ways. - Children can make a quiz about a story or class topic. - Children can make a fact file on a non-fiction topic. - Children can make a presentation to the class.
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Year 3	<u>Unit 1 – coding</u> - Children understand what a flowchart is and how flowcharts are used in computer programming. - Children understand that there are different types of timers and select the right type of purpose. - Children understand how to use the repeat command. - Children understand the importance of nesting. - Children design and create an interactive scene.	<u>Unit 2 – online safety</u> - Children can know what makes a safe password. - Children can learn methods for keeping passwords safe. - Children can understand how the internet can be used in effective communication. - Children can consider if content on websites is always true. - Children can understand the meaning of age restriction symbols. <u>Unit 3 – spreadsheets</u> - Children can use the ‘more than’, ‘less than’ and ‘equals’ tools to compare numbers. - Children can use 2Calculate to collect data and produce a variety of graphs. - Children can use the advanced mode of 2Calculate to learn about cell references.	<u>Unit 4 – touch-typing</u> - Children understand the correct way to sit at the keyboard. - Children understand what is meant by the ‘home’, ‘bottom’ and ‘top row’ keys. - Children can use two hands to type on the keyboard. <u>Unit 5 – email</u> - Children can think about different methods of communication. - Children can open and respond to an email. - Children can learn how to use email safely. - Children can attach work to an email.	<u>Unit 6 – branching databases</u> - Children can sort objects using just ‘yes’ or ‘no’ questions. - Children can complete a branching database. - Children can create a branching database. <u>Unit 7 – simulations</u> - Children can consider what simulations are. - Children can explore a simulation. - Children can analyse and evaluate a simulation.	<u>Unit 8 – graphing</u> - Children can enter data for a graph and answer questions. - Children can present results in a range of graphical formats. <u>Unit 9 – presenting with Microsoft PowerPoint</u> - Children can create a page in a presentation. - Children can add media to their slides. - Children can add animation and use transitions in a presentation. - Children can add timings to their presentation. - Children can create an engaging presentation.	<u>Unit 10 – micro:bit</u> - Children understand that the micro:bit is a tiny computer which needs code to make it work. - Children can use Free code micro:bit to make code that the micro:bit can understand. - Children can code a micro:bit to show animations on its LEDs. - Children can recognise the key inputs and outputs such as accelerometer and LED displays. - Children can create code that generates sound outputs based on different movement gestures.
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Year 4	<u>Unit 1 – coding</u> - Children can begin to understand selection in computer programming. - Children can understand how IF statements work. - Children can understand how to use co-ordinates in computer programming. - Children understand the ‘repeat until’ command. - Children can understand how ‘if/else’ statements work. - Children can use variables when programming. - Children can create a playable game.	<u>Unit 2 – online safety</u> - Children understand how to protect themselves from online identity theft. - Children understand that information put online leaves a digital footprint. - Children identify risks and benefits of installing software and apps. - Children understand that copying other people’s work is called ‘plagiarism’. - Children can identify appropriate behaviours when participating or contributing to online projects. - Children can identify the positive and negative influences of technology. - Children can understand the importance of balancing game and screen time.	<u>Unit 3 – spreadsheets</u> - Children can format cells as currency. - Children can use the formula wizard to calculate averages. - Children can combine tools to make spreadsheet activities. - Children can use a spreadsheet to model a real-life situation. - Children can add a formula to a cell to automatically calculate. <u>Unit 4 – writing for different audiences</u> - Children can explore how font size and style can impact. - Children can use a simulated scenario to produce a news report. - Children can use a simulated scenario to write for a community campaign.	<u>Unit 5 – using Logo</u> - Children can input simple instructions into Logo. - Children can use 2Logo to create letter shapes. - Children can use the ‘repeat’ function in Logo to create shapes. - Children can use and build procedures in Logo. <u>Unit 6 – animation</u> - Children understand how animations are created. - Children can use the ‘Onion Skin’ tool to create an animated image. - Children can add backgrounds and sounds to animations. - Children can use simple ‘stop motion’ animation. - Children can share animation on class display board and by blogging.	<u>Unit 7 – effective searching</u> - Children can locate information on the search results page. - Children can use search effectively to find out information. - Children can assess whether an information source is true and reliable. <u>Unit 8 – hardware investigators</u> - Children understand the different parts that make up a computer. - Children can recall the different parts of a computer.	<u>Unit 9 – making music</u> - Children can identify the main elements of music. - Children understand and can experiment with rhythm and tempo. - Children can create a melodic phrase. - Children can compose a piece of music. <u>Unit 10 – introduction to Artificial Intelligence.</u> - Children understand what is meant by the term artificial intelligence. - Children understand ways that AI is used in our everyday lives. - Children can consider the future of AI. - Children can see how AI is used in music and the arts to create things.
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Year 5	<u>Unit 1 – coding</u> - Children can begin to simplify code and make a playable game. - Children can program a simulation using 2Code. - Children understand what decomposition and abstraction are in computer science. - Children can take a real-life situation, decompose it and think about the level of abstraction. - Children understand how to use friction in code. - Children understand what a function is and how they work in code. - Children understand what the different variable types are and how they're used differently. - Children can use 'strings'. - Children understand what a concatenation is.	<u>Unit 2 – online safety</u> - Children can understand the impact that sharing digital content. - Children can review sources of support when using technology and understand their responsibility to one another online. - Children can maintain secure passwords. - Children can understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. - Children can understand what is appropriate and inappropriate text, photographs and videos and consider the impact of sharing these online. - Children can reference sources in their work. - Children can search the internet and consider its reliability and check the validity of information. - Children can ensure reliability through using different methods of communication.	<u>Unit 3 – spreadsheets</u> - Children can create a formula in a spreadsheet to convert measurements of length. - Children can use the count tool. - Children can use a spreadsheet to model real-life problems. - Children can create simple formulae that use text variables. - Children can use a spreadsheet to model a real-life situation. <u>Unit 4 – databases</u> - Children understand the different ways to search a database. - Children can contribute to class database. - Children can create their own database on a chosen topic.	<u>Unit 5 – game creator</u> - Children can plan their own game. - Children can design and create the game environment. - Children can design and create the game quest. - Children can finish and share their game. - Children can self and peer evaluate.	<u>Unit 6 – 3D modelling</u> - Children can explore '2Design and Make'. - Children can explore the effect of moving points when designing. - Children can design a 3D model to fit a certain criteria. - Children can refine and print their design. <u>Unit 7 – concept maps</u> - Children can understand the need for visual representation when generating and discussing complex ideas. - Children understand the uses of a concept map. - Children can use the correct vocabulary for a concept map. - Children can create a concept map. - Children can use 2Connect collaboratively to create a concept map.	<u>Unit 8 – word processing with MS Word</u> - Children can understand what a word processing tool is for. - Children can add and edit images. - Children can use the wrapping tool. - Children can change the look of text within a document. - Children can add features to a document to enhance it. - Children can use tables to present information. - Children can use a template. - Children can consider page layout including heading and columns.
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Year 6	<u>Unit 1 – coding</u> - Children can design a playable game with a ‘timer’ and a ‘score’. - Children can use selection and variables. - Children can understand the purpose of functions. - Children can use flowcharts to create and debug code. - Children can create a simulation in which devices can be controlled. - Children can understand how user input can be used in a program. - Children understand how 2Code can be used to make a text-adventure game.	<u>Unit 2 – online safety</u> - Children can identify the benefits and risks of devices sharing location. - Children can identify secure sites by looking for privacy seals of approval. - Children can identify the risks and benefits of sharing personal information. - Children can explain what digital footprint is and consider what is appropriate online behaviour. - Children can understand the importance of balancing game and screen time. - Children can identify the positive and negative influences of technology on health and environment. <u>Unit 3 – spreadsheets</u> - Children can use a spreadsheet to investigate probability. - Children can use a spreadsheet to calculate. - Children can use a spreadsheet to plan how to spend money.	<u>Unit 4 – blogging</u> - Children understand the key features of a blog. - Children can plan the theme and content of a blog. - Children can write a blog and blog post. - Children can consider the effect upon the audience by changing the visuals. - Children can contribute to an existing blog. - Children can understand why posts need to be approved by the teacher. - Children can understand the importance of commenting on blogs. <u>Unit 5 – text adventures</u> - Children can use 2Connect to plan a story adventure. - Children can make a story-based adventure using 2Create a Story. - Children can read and understand given code for a story-adventure game. - To debug and improve a text-adventure game.	<u>Unit 6 – networks</u> - Children can understand what the internet consists of and what LAN and WAN are. - Children can research about the history of the internet. - Children can consider what the future might look like. <u>Unit 7 – quizzing</u> - Children can create a picture-based quiz for young children. - Children can use the different question types in 2Quiz. - Children can make a quiz that requires the player to search a database. - Children can make a quiz to test teachers.	<u>Unit 9 – spreadsheets with Microsoft Excel</u> - Children can navigate around a spreadsheet using cell references and enter data into cells. - Children can use some basic data formulae for percentages, average, max and min numbers. - Children can use Excel to save time and effort performing calculations. - Children can use a spreadsheet to model a real-life situation. - Children can manipulate how data is presented. - Children can create a variety of graphs in Excel. - Children can solve problems using a spreadsheet.	<u>Unit 8 – understanding binary</u> - Children can examine how whole numbers are used as the basis for representing all types of data. - Children can recognise that data can use 1s and 0s – known as binary. - Children can understand that 1s and 0s can affect the electrical states in hardware.
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