Computing Curriculum Coverage

Threshold Concepts ↓	EYFS	Years 1 and 2	Years 3 and 4	Years 5 and 6
Connect This concept involves developing an understanding of how to safely connect with others.	**Milestone**: Participate in the Tapestry process. To understand that passwords and usernames should not be shared with peers only adults they know and trust. To post a picture or observation to their parents with the supervision of their class teacher. **Hardware/Software:** iPads iPods Tapestry	**National Curriculum:** To recognise common uses of information technology beyond school To 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. To use technology purposefully to create, organise, store, manipulate and retrieve digital content **Coverage**: Participate in class social media accounts. Understand online risks and the age rules for sites. **Hardware/Software:** Twitter Tapestry	**National Curriculum:** To 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 **Coverage**: Contribute to blogs that are moderated by teachers. Give examples of the risks posed by online communications. Understand the term 'copyright'. Understand that comments made online that are hurtful or offensive are the same as bullying. Understand how online services work. **Hardware/Software:** School Website Laptops MS Word Google	**National Curriculum:** To use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content **Coverage**: Collaborate with others online on sites approved and moderated by teachers. Give examples of the risks of online communities and demonstrate knowledge of how to minimise risk and report problems. Understand and demonstrate knowledge that it is illegal to download copyrighted material, including music or games, without express written permission, from the copyright holder. Understand the effect of online comments and show responsibility and sensitivity when online. Understand how simple networks are set up and used. **Hardware/Software:** Computer iPads

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Communicate This concept involves using apps to communicate one's ideas.		**National Curriculum:** To recognise common uses of information technology beyond school To 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. To use technology purposefully to create, organise, store, manipulate and retrieve digital content **Coverage**: Use a range of applications and devices in order to communicate ideas, work and messages. **Hardware/Software:** OneNote Laptop	**National Curriculum:** To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Coverage**: Use some of the advanced features of applications and devices in order to communicate ideas, work or messages professionally. **Hardware/Software:** MS Teams Laptop	**National Curriculum:** To use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact. **Coverage**: Choose the most suitable applications and devices for the purposes of communication. Use many of the advanced features in order to create high quality, professional or efficient communications. **Hardware/Software:** Wix Computers

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Collect This concept involves developing an understanding of databases and their uses.	Milestone: Know that information can be received from computers To interact with IT software that requires a response from them. Hardware/Software: Bee-Bots iPads	National Curriculum: To recognise common uses of information technology beyond school To use technology purposefully to create, organise, store, manipulate and retrieve digital content Coverage: Use simple databases to record information in areas across the curriculum. Hardware/Software: J2Data Laptop	National Curriculum: To 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 Coverage: Devise and construct databases using applications designed for this purpose in areas across the curriculum. Hardware/Software: MS Teams Laptops	National Curriculum: To 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 Coverage: Select appropriate applications to devise, construct and manipulate data and present it in an effective and professional manner. Hardware/Software: Excel Computers

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Code – This concept involves developing an understanding of instructions, logic and sequences.				
Threshold Concepts ↓	EYFS	Years 1 and 2	Years 3 and 4	Years 5 and 6
Motion	**Milestone**: **Show skills in making toys work by pressing parts or lifting flaps to achieve effects such as sound, movements or new images** Completes a simple program on a computer Select a toy for the purpose of programming it **Hardware/Software:** Bee-Bot	**National Curriculum:** To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content **Coverage**: Control motion by specifying the number of steps to travel, direction and turn. **Hardware/Software:** iPad Scratch Jr	**National Curriculum:** To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 **Coverage**: Use specified screen coordinates to control movement. **Hardware/Software:** Laptops iPads Scratch	**National Curriculum:** To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 **Coverage**: Set IF conditions for movements. Specify types of rotation giving the number of degrees. **Hardware/Software:** Computers Laptops Scratch

Computing Curriculum Coverage

Looks		National Curriculum: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content Coverage: Add text strings, show and hide objects and change the features of an object. Hardware/Software: iPad Scratch Jr	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Set the appearance of objects and create sequences of changes. Hardware/Software: Laptops iPads Scratch	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Change the position of objects between screen layers (send to back, bring to front). Hardware/Software: Computers Laptops Scratch

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Sound		National Curriculum: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content Coverage: Select sounds and control when they are heard, their duration and volume. Hardware/Software: iPad Scratch Jr	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Create and edit sounds. Control when they are heard, their volume, duration and rests. Hardware/Software: Laptops iPads Scratch	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Upload sounds from a file and edit them. Add effects such as fade in and out and control their implementation. Hardware/Software: Computers Laptops Scratch

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Draw		National Curriculum: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content Coverage: Control when drawings appear and set the pen colour, size and shape. Hardware/Software: iPad Scratch Jr	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Control the shade of pens. Hardware/Software: Laptops iPads Scratch	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Combine the use of pens with movement to create interesting effects. Hardware/Software: Computers Laptops Scratch

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Events	**Milestone**: Select software for a purpose such as online books to read for pleasure **Hardware/Software:** Bug Club iPads	**National Curriculum:** To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content **Coverage**: Specify user inputs (such as clicks) to control events. **Hardware/Software:** iPad Scratch Jr	**National Curriculum:** To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 **Coverage**: Specify conditions to trigger events. **Hardware/Software:** Laptops iPads Scratch	**National Curriculum:** To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 **Coverage**: Set events to control other events by 'broadcasting' information as a trigger. **Hardware/Software:** Computers Laptops Scratch

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Control	Milestone: Shows and interest in technological toys with knobs or pulleys, or real objects such as cameras or mobile phones Uses IT hardware to interact with age appropriate software Hardware/Software: iPads	National Curriculum: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content Coverage: Specify the nature of events (such as a single event or a loop). Hardware/Software: iPad Scratch Jr	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Use IF THEN conditions to control events or objects. Hardware/Software: Laptops iPads Scratch	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Use IF THEN ELSE conditions to control events or objects. Hardware/Software: Computers Laptops Scratch

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Sensing		National Curriculum: To understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions To create and debug simple programs To use logical reasoning to predict the behaviour of simple programs To use technology purposefully to create, organise, store, manipulate and retrieve digital content Coverage: Create conditions for actions by waiting for a user input (such as responses to questions like: What is your name?). Hardware/Software: iPad Scratch Jr	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Create conditions for actions by sensing proximity or by waiting for a user input (such as proximity to a specified colour or a line or responses to questions). Hardware/Software: Laptops iPads Scratch	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Use a range of sensing tools (including proximity, user inputs, loudness and mouse position) to control events or actions. Hardware/Software: Computers Laptops Scratch

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Variables and Lists			National Curriculum: To use sequence, selection, and repetition in programs; work with variables and various forms of input and output Coverage: Use variables to store a value. Use the functions define, set, change, show and hide to control the variables. Hardware/Software: Laptops iPads Scratch	National Curriculum: To use sequence, selection, and repetition in programs; work with variables and various forms of input and output Coverage: Use lists to create a set of variables. Hardware/Software: Computers Laptops Scratch

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Operators			National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Use the Reporter operators () + () () - () () * () () / () To perform calculations. Hardware/Software: Laptops iPads Scratch	National Curriculum: To design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts To use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs To 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 Coverage: Use the Boolean operators () < () () = () () > () ()and() ()or() Not() To define conditions. Use the Reporter operators () + () () - () () * ()

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				() / () To perform calculations. Pick Random () to () Join () () Letter () of () Length of () () Mod () This reports the remainder after a division calculation Round () () of (). Hardware/Software: Computers Laptops Scratch