Computing

	Reception	Year 1	Year 2
NC Objectives	**Personal, Social and Emotional Development – Managing Self** • Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly. **Expressive Arts and Design – Creating with materials** • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	• 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.	• 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.
Multimedia	• Be confident to try new activities and show independence, resilience and perseverance in the face of challenge. • Explain the reasons for rules, know right from wrong and try to behave accordingly. • Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.	Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Log on, off and shutdown a computer. • Log in to sites such as Purple Mash. • Use space bar, backspace, arrow keys and return. • Type a simple, short sentence. • Save, retrieve and print work.	• Start to type with two hands. • Save, retrieve and edit sounds. • Use shift for capital letters. • Use software to record sounds (Garageband). • Capture and upload chosen video. • Use programmes to present information.
Programming	• Make a Bee bot move using the direction buttons.	• Know that an algorithm is a set of instructions. • Create a simple program. • Predict what might happen when a button/tool is used.	• 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.

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Communication and collaboration		• Recognise common uses of information technology beyond school. • Know what a website is for and be able to use a link.	• Recognise common uses of information technology beyond school. • Explore websites. • Begin to use email.
Data		• Know that images give information. • Use and explore pictograms. • Sort objects and pictures into lists or simple tables.	• To create a branching database. • Put data into a pictogram (links to Maths).
E-Safety	See separate E-safety map (Project Evolve)	See separate E-safety map (Project Evolve)	See separate E-safety map (Project Evolve)
Themes	Purple Mash Understanding the World - Technology	Project Evolve E-safety planning runs through the whole year with short starter activities. Purple Mash Unit 1.1 Exploring Purple Mash Beebots Unit 1.2 Grouping & Sorting Unit 1.3 Pictograms Unit 1.6 Animated Stories Unit 1.7 Coding Typing Skills	Project Evolve E-safety planning runs through the whole year with short starter activities. Purple Mash Unit 2.1 Coding Unit 2.7 Making Music Unit 2.2 Online Safety Typing Skills Unit 2.3 Spreadsheets Unit 2.5 Effective Searching Beebots Unit 2.6 Creating Pictures
Vocab	Computer, laptop, iPad, mouse, keyboard	Instructions Buttons Robots Patterns Program image bank Word bank Space bar communicate data pictogram	Forward Backward Right-angle turn Algorithm Sequence Debug Predict Paint effects Templates Animation purpose questions graphs charts save retrieve
Enrichment	Use of laptops, beebots and iPads in classrooms	Use of laptops, beebots and iPads in classrooms	Use of laptops and iPads in classrooms

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	Year 3	Year 4	Year 5	Year 6
NC Objectives	• 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,	• 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,	• 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,	• 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

	analysing, evaluating and presenting data and information • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable	analysing, evaluating and presenting data and information • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable	analysing, evaluating and presenting data and information • Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable	• Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable
Multimedia	• Get quicker at typing with both hands. • Capture a video for a purpose. • Choose which clips to keep and which to discard. • Create a title slide in PowerPoint and choose a style. • Change the layout of a slide in PowerPoint. • Insert text from the internet or personal files.	• Change font, size, style and colour. • Align text left, right and centre. • Trim and arrange clips to convey meaning. • Add titles, credits, slide transitions and special effects. • Insert a picture or graph from the internet or personal files. • Begin to use transitions between slides.	• Collect audio from a variety of sources. • Create a track using effects. • Edit and refine their work. • Use stop-go animation. • Create a multi-slide PowerPoint presentation. • Use special effects and transitions in videos and export their video.	• 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.
Programming	• Design and write a program with a specific goal. • Use and create sequences within a program. • Explain how simple algorithms work.	• Design, write and debug a program with a specific goal. • Learn to use the repetition function within a program. • Start to use logical reasoning to explain how some simple algorithms work.	• Solve problems by decomposing the problem into smaller parts. • Learn how to use variables within a program. • Begin to identify errors in simple programs and look at ways of correcting them.	• 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

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Communication and collaboration	• Know that the internet comes from outside the school and information can travel e.g. email. • Use a search engine to find a range of media. • Explore a website by clicking on the arrows, menus and hyperlinks. • Create and send an email.	• Know the parts of a computer and their function. • Type in a URL to find a website. • Add websites to favourites list. • Attach files in an email and email multiple people.	• Know the difference between the World Wide Web and the internet. • Use advanced search functions in Google. • Talk about the reliability of websites. • Understand where work is saved when using an online program.	• 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. • Use strategies to check reliability of information. • Understand that websites such as Wikipedia are created by users and use their knowledge of domain names to judge the validity of websites.
Data	• Put information into a table. • Recognise which information is suitable for their topic. • Sort and organise information.	• Design a questionnaire to collect information. • Input their data, create and search a branching database.	• Create data collection forms and enter data accurately into these. • Check inaccurate data. • Sort and filter information. • Make graphs to show the information.	• Select, use and combine a variety of software including collecting, analysing, evaluating and presenting data and information. • Use formulae within a spreadsheet. • Understand that changing data affects calculations.
E-Safety	See separate E-safety map (Project Evolve)	See separate E-safety map (Project Evolve)	See separate E-safety map (Project Evolve)	See separate E-safety map (Project Evolve)
Themes	Project Evolve E-safety planning runs through the whole year with short starter activities. Purple Mash Unit 3.1 Coding Unit 3.2 Online Safety Unit 3.3 Spreadsheets Unit 3.4 Touch typing Unit 3.5 Email	Project Evolve E-safety planning runs through the whole year with short starter activities. Purple Mash Unit 4.1 Coding Unit 4.3 Spreadsheets Unit 4.5 Logo Unit 4.6 Animation Unit 4.8 Hardware	Project Evolve E-safety planning runs through the whole year with short starter activities. Purple Mash Unit 5.1 Coding Unit 5.2 Online Safety Unit 5.3 Spreadsheets Unit 5.4 Databases Unit 5.5 Game Creator	Project Evolve E-safety planning runs through the whole year with short starter activities. Purple Mash Unit 6.1 Coding Unit 6.2 Online Safety Unit 6.3 Spreadsheets Unit 6.5 Text Adventures Unit 6.6 Networks

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	Unit 3.7 Simulations	Unit 3.6 Branching Databases	Unit 5.6 Modelling Unit 6.6 Networks - lesson 1 only	Unit 6.7 Quizzing
Vocab	Sequence instructions Sequence debugging Test + improve Logo commands Sequence programming Questioning Database Construct Contribute Recording data Data logger Present data	Type + edit logo commands Sensors Open-ended problems Bugs in programs Complex programming Database creation Database searches Inaccurate data	Explore procedures Refine procedures Variable Hardware + software control Change inputs Different outputs Articulate solutions Commands Spreadsheets Complex searches (and/or:) Problem solving Present answers Analyse information Question data Interpret	Predicting outputs Plan, program, test & review a program Program writing Control mimics + devices Measure input Create variables Link errors HTML code Generate Process Interpret Store Present information Plausibility Appropriate data tool Interrogate Investigations
Enrichment	Use of laptops and iPads in classrooms	Use of laptops and iPads in classrooms	Use of laptops and iPads in classrooms	Use of laptops and iPads in classrooms