Computing in the Early Years and Foundation Stage

Children in the Early Years and Foundation Stage will have opportunities to use Mini Mash or Purple Mash as part of their Computing experience to support them in working towards their early learning goals (see below).

Computing		
Stepping Stones EYFS 1	Personal, Social and Emotional Development	• Remember rules without needing an adult to remind them.
	Physical Development	• Match their developing physical skills to tasks and activities in the setting.
	Understanding the World	• Explore how thingswork.
Foundation EYFS 2	Personal, Social and Emotional Development	• Show resilience and perseverance in the face of a challenge. • Know and talk about the different factors that support their overall health andwellbeing: • - sensible amounts of 'screen time'. • 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.
	Physical Development	• Develop their small motor skills so that they can use a range of tools competently, safely and confidently.
	Expressive Arts and Design	• Explore, use and refine a variety of artistic effects to express their ideas and feelings. Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

THE COMPUTING CURRICULUM AT ELBURTON PRIMARY SCHOOL

	Autumn		Spring		Summer	
Year 1	**Unit 1.1 - Online safety & Exploring Purple Mash (4 weeks)**	**Unit 1.9 - Technology outside school (2 weeks)**	**Unit 1.5 - Maze Explorers (3 weeks)**	**Unit 1.7 - Coding (3 weeks)**	**Unit 1.7 continued - Coding (2weeks)**	**Unit 1.6 – Animated Story Books (5 weeks)**
Strand	**Digital Literacy**	**Digital Literacy**	**Computer Science**	**Computer Science**	**Information Technology**	**Information Technology**
Key NC Objectives	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.	Recognise common uses of information technology beyond school.	Understand what algorithms are; how they are implemented as a program on digital devices and that programmes execute by following precise and unambiguous instructions. Create and debug simple programs. Use logical reasoning to predict the behaviour of simple programs.	Understand what algorithms are; how they are implemented as a program on digital devices and that programmes 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 context.	Use technology purposefully to create, organise, store, manipulate and retrieve digital context.
Suggested Learning Steps	To learn to log in safely. To learn the idea of 'ownership' of their creative work'. To learn how to find saved work in the Online Work area and find teacher comments. To learn how to search Purple Mash to find resources. To learn to become familiar with the types of resources available in the Topics section.	To learn where technology is used in the local community. To learn that there are many different examples of technology outside school.	To learn the functionality of the basic direction keys. To learn how to create and debug a set of instructions (algorithm). To learn how to use the additional direction keys as part of an algorithm. To learn how to change and extend the algorithm list. To learn how to set and access challenges for peers.	To learn what coding means in computing. To learn what instructions are and predict what might happen when they are followed. To learn to use code to make a computer program. To learn what object and actions are. To learn what an event is.	To learn what coding means in computing. To learn what instructions are and predict what might happen when they are followed. To learn to use code to make a computer program. To learn what object and actions are. To learn what an event is.	To learn what e-books and the 2Create a Story tool is. To learn how to add animation to a story. To learn how to add sound to a story, including voice recording and music the children have composed. To learn how to create a more complex story, including adding backgrounds and copying and pasting pages.

	To learn to add pictures and text to work. To learn about the common icons used in Purple Mash for Save, Print, Open, New. To learn and understand the importance of logging out when they have finished.			To learn how to us use an event to control an object. To begin to understand how code executes when a program is run. To understand what backgrounds and objects are. To learn how to plan and make a computer program.	To learn how to us use an event to control an object. To begin to understand how code executes when a program is run. To understand what backgrounds and objects are. To learn how to plan and make a computer program.	To learn how to share e-books on a class display board.
Key Vocabulary	Computer Technology	Alert Avatar Button Device File name Icon Log in Log out Menu My work area Notification Private Password	Algorithm Challenge Command Direction Instruction Left Right Route Undo Unit	Action Algorithm Background Code Coding Command Debug/ debugging Event Execute	Action Algorithm Background Code Coding Command Debug/ debugging Event Execute	Animation Background Clip-art Gallery E-book Edit Font Sound Sound-effect Text

THE COMPUTING CURRICULUM AT ELBURTON PRIMARY SCHOOL

	Autumn		Spring	Summer	
Year 2	**Unit 2.2 – Online Safety (3 weeks)**	**Unit 2.5 – Effective Searching (3 weeks)**	**Unit 2.1 – Coding (5 weeks)**	**Unit 2.6 – Creating Pictures and Unit 2.7 Making Music (merge in 4 weeks)**	**Unit 2.3 -Spreadsheets (3/4 weeks)**
Strand	**Digital Literacy**	**Digital Literacy**	**Computer Science**	**Information Technology**	**Information Technology**
Key NC Objectives	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.	Recognise common uses of information technology beyond school. Use technology purposefully to create, organise, store, manipulate and retrieve digital context.	Understand what algorithms are; how they are implemented as a program on digital devices and that programmes 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 context.	Use technology purposefully to create, organise, store, manipulate and retrieve digital context.
Suggested Learning Steps	To learn how to refine searches using the Search tool. To learn how to use digital technology to share work on Purple Mash to communicate and connect with others locally. To learn what it means to share more globally on the Internet. To learn how to use Email as a communication tool using 2Respond simulations. To learn how we should talk to others in an online situation.	To learn and understand the terminology associated with searching. To gain a better understanding of searching on the Internet.	To learn what an algorithm is. To learn how to create a computer program using an algorithm. To learn how to create a program using a given design. To learn and understand the collision detection event. To understand that algorithms follow a sequence. To learn how to design an algorithm that follows a timed sequence. To understand that different objects have different properties. To learn what different events do in code. To learn and understand the function of buttons in a program. To learn how to debug simple programs.	To learn the functions of the 2Paint a Picture tool. To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). To learn how to recreate Pointillist art and look at the work of pointillist artists such as Seurat. To learn about the work of Piet Mondrian and recreate the style using the lines template. To learn about the work of William Morris and recreate the style using the patterns template. To explore surrealism and e Collage.	To learn how to use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. To learn how to copy and paste in 2Calculate. To learn how to use the totalling tools. To use a spreadsheet for money calculations. To learn how to use the 2Calculate equals tool to check calculations. To learn how to use 2Calculate to collect data and produce a graph.

	To learn how to open and send simple online communications in the form of email. To learn that information put online leaves a digital footprint or trail. To learn and identify the steps that can be taken to keep personal data and hardware secure.			To learn how to make music digitally using 2Sequence. To explore, edit and combine sounds using 2Sequence. To learn how to edit and refine composed music. To think about how music can be used to express feelings and create tunes which depict feelings. To learn how to upload a sound from a bank of sounds into the Sounds section.	
Key Vocabulary	Attachment Digital footprint Email Filter Internet Personal Information Private Information Search Secure Sharing	Digital footprint Domain Internet Network Search Engine Web address Web page World Wide Web Web site	Action Algorithm Background Bug Button Click events Collision detection Command Debug/ debugging Event Execute	Art Fill Impressionism Palette Pointillism Style Surrealism Beat Compose Note Tune Sound Effect Soundtrack Speed Tempo Volume	Block graph Cell Column Copy Count tool Data Drag Equals Equals tool Label Row Speak tool Table Total

THE COMPUTING CURRICULUM AT ELBURTON PRIMARY SCHOOL

	Autumn		Spring		Summer
Year 3	**Unit 3.4 - Touch Typing (4 weeks)**	**Unit 3.2 - Online Safety (3 weeks)**	**Unit 3.5 - Email (3 weeks)**	**Unit 3.9 - Presenting with PPT (3 weeks)**	**Unit 3.1 - Coding (6 weeks)**
Strand	**Information Technology**	**Digital Literacy**	**Digital Literacy**	**Information Technology**	**Computer Science**
Key NC Objectives	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.	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. 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.	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.	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.
Suggested Learning Steps	To learn and understand typing terminology. To understand the correct way to sit at the keyboard.	To learn what makes a safe password. To learn methods for keeping passwords safe. To learn and understand how the Internet can be	To learn the different methods of communication. To learn how to open and respond to an email using an address book.	To learn and understand the uses of PowerPoint. To learn how to create a page in a presentation. To learn how to add media to a presentation.	To learn what a flowchart is and how flowcharts are used in computer programming. To learn and understand that there are different types of timers and select the right type for purpose. To learn how to use the repeat command.

	To learn how to use the home, top and bottom row keys. To practise typing with the left and right hand.	used in effective communication. To learn how a blog can be used to communicate with a wider audience. To consider the truth of the content of websites. To learn about the meaning of age restrictions symbols on digital media and devices.	To learn how to use email safely. To learn how to add an attachment to an email. To explore a simulated email scenario.	To learn how to add animations to a presentation. To learn how to add timings to a presentation. To use the skills learnt to design and create an engaging presentation.	To learn the importance of nesting. To design and create an interactive scene.
Key Vocabulary	Posture Keys Space bar Typing	Appropriate Inappropriate Blog Password Personal information Internet Spoof Reputable source Reliable source Permission Verify Vlog Website	Address book Attachment BCC (Blind Carbon Copy) CC Communication Compose Email Inbox Password Personal Information Save to draft Trusted contact	Animation Border properties Font formatting Layer Media Presentation Slide Slideshow Text Box Transition Word Art	Action Alert Algorithm Background Bug Button Click Event Code Collision detection event Command Debug / debugging

	Autumn		Spring	Summer	
Year 4	**Unit 4.2 – Online Safety (4 weeks)**	**Unit 4.7 – Effective Searching (3 weeks)**	**Unit 4.1 – Coding (6 weeks)**	**Unit 4.5 – Logo (4 weeks)**	**Unit 4.6 – Animation (3 weeks)**
Strand	**Digital Literacy**	**Information Technology**	**Computer Science**	**Computer Science**	**Information Technology**
Key NC Objectives	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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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.	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. 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.	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.	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.
Suggested Learning Steps	Going Phishing To understand how children can protect themselves from online identity theft. To understand that information put online leaves a digital footprint or trail and that this can aid identity theft. Going Phishing	Using a Search Engine To locate information on the search results page. Use Search Effectively to Answer Questions To use search effectively to find out information. Reliable Information Sources	Design, Code, Test and Debug To review coding vocabulary and knowledge. To create a simple computer program. IF Statements To begin to understand selection in computer programming.	Introduction to 2Logo To learn the structure of the language of 2Logo. To input simple instructions in 2Logo Creating Letters using 2Logo To use 2Logo to create letter shapes.	Animating an Object To decide what makes a good, animated film or cartoon and discuss favourite animations. To learn how animations are created by hand. To find out how 2Animate animations can be created in a similar way using technology.

	To identify the risks and benefits of installing software including apps Plagiarism To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. To identify appropriate behaviour when participating or contributing to collaborative online projects for learning. To identify the positive and negative influences of technology on health and the environment. o understands the importance of balancing game and screen time with other parts of their lives	To assess whether an information source is true and reliable.	To understand how an IF statement works. Co-ordinates To understand how to use coordinates in computer programming. To understand how an IF statement works Repeat Until and IF/ELSE Statements To understand the Repeat until command. To begin to understand selection in computer programming. To understand how an IF/ELSE statement works. Number Variables To understand what a variable is in programming. To use a number variable. Making a Playable Game To review vocabulary and concepts learnt in Year 4 Coding. To create a playable game.	Using the 'Repeat' Command in 2Logo To use the Repeat command in 2Logo to create shapes. Using Procedures To use and build procedures in 2Logo.	2Animate Tools To learn about onion skinning in animation. To add backgrounds and sounds to animations. Stop Motion Animation Introducing 'stop motion' animation. To share animation the class blog.
	Citation Copyright Password Collaborate Malware SMART rules Phishing Cookies Digital Footprint Ransomware Virus Spam Ad fly Watermark	Balanced View Easter eggs Internet Key words Reliability Results Search engine	Action Alert Algorithm Background Button Code blocks Command Debug Design Execute Event Nest Implement Repeat until	Debugging Grid LOGO LOGO Commands FD RT LT BK Multi Line mode Pen Down Procedure Repeat Run Speed SETPC SETPS	Animation FPS Frames per second Frame Onion Skinning Pause Stop motion

			Flowchart If/else Statement Object Predict 'If' Statement Input Prompt Repeat Run		

	Autumn		Spring	Summer
Year 5	**Unit 5.2 – Online Safety (3 weeks)**	**Unit 5.4 – Databases (4 weeks)**	**Unit 5.1 – Coding (6 weeks)**	**Unit 5.5 – Game Creator (5 weeks)**
Strand	**Digital Literacy**	**Information Technology**	**Computer Science**	**Computer Science**
Key NC Objectives	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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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	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 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	Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts 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
Suggested Learning Steps	Responsibilities and Support when Online To gain a greater understanding of the impact that sharing digital content can have. To review sources of support when using technology. To review children' responsibility to one another Protecting Privacy To know how to maintain secure passwords. To understand the advantages, disadvantages, permissions, and	Searching a Database To learn how to search for information in a database. Creating a Class Database To contribute to a class database. Creating a Topic Database To create a database around a chosen topic.	Coding Efficiently To review existing coding knowledge. To begin to be able to simplify code. To create a playable game. Simulating a Physical System To understand what a simulation is. To program a simulation using 2Code. Decomposition and Abstraction To know what decomposition and abstraction are in Computer Science. To take a real-life situation, decompose it and think about the level of abstraction. To use decomposition to plan of a real-life situation. Friction and Functions To understand how to use friction in code. To begin to understand what a function is and how functions work in code.	Setting the scene. To Introduce the 2DIY 3D tool. To begin planning a game. Creating the Game Environment To design the game environment. The Game Quest To design the game quest to make it a playable game. Finishing and Sharing To finish and share the game. Evaluation To self- and peer evaluate.

	purposes of altering an image digitally and the reasons for this. To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. Citing Sources To learn about how to reference sources in their work. To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. Reliability Ensuring reliability through using different methods of communication.		Introducing Strings To understand what the different variable types are and how they are used differently. To understand how to create a string. Text Variables and Concatenation To begin to explore text variables when coding. • To understand what concatenation is and how it works	
	Citation Copyright Identity theft PEGI rating Password Reliable sources Collaborate Malware Personal information SMART rules Communication Encrypt Ownership Phishing Spoof Validity	Arrange Avatar Chart Collaborative Data Database Field Database Report Group Record Search Sort Statistics	Abstraction Action Algorithm Concatenation Debugging Decomposition Efficient Flowchart Selection Simplify Repeat Sequence Timer Variable	Animation Image Texture Computer game Instructions Perspective Customise Interactive Evaluation Screenshot Playability

	Autumn		Spring	Summer	
Year 6	**Unit 6.2 – Online Safety (2 weeks)**	**Unit 6.3 - Spreadsheets (5 weeks)**	**Unit 6.1 - Coding (6 weeks)**	**Unit 6.7 – Quizzing (4 weeks)**	**Unit 6.4 – Blogging (2 weeks)**
Strand	**Digital Literacy**	**Information Technology**	**Computer Science**	**Information Technology**	**Computer Science**
Key NC Objectives	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 technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	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	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 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	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	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 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.
Suggested Learning Steps	Message in a Game To identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location.	Exploring Probability To use a spreadsheet to investigate the probability of the results of throwing many dice. Exploring Probability To use a spreadsheet to	Designing and making a more Complex Program To design a playable game with a timer and a score. To plan and use selection and variables. To understand how the launch command works. Using Functions To use functions and understand why they are useful. To understand how functions are created and called.	Introducing 2DIY To create a picture-based quiz for young children. Using 2Quiz To learn how to use the question types within 2Quiz.	What is a Blog? To identify the purpose of writing a blog. To identify the features of successful blog writing. Planning a Blog

	To identify secure sites by looking for privacy seals of approval, e.g., https, padlock icon. To identify the benefits and risks of giving personal information and device access to different software. Online Behaviour To review the meaning of a digital footprint and understand how and why people use their information and online presence to create a virtual image of themselves as a user. To have a clear idea of appropriate online behaviour and how this can protect themselves and others from possible online dangers, bullying and inappropriate behaviour. To begin to understand how information online can persist and give away details of those who share or modify it. Screen Time To understand the importance of balancing game and screen time with other parts of their lives. To identify the positive and negative influences of technology on health and the environment.	investigate the probability of the results of throwing many dice. Use a Spreadsheet to Plan Pocket Money Spending To use a spreadsheet to plan how to spend pocket money and the effect of saving money. Planning a School Event To use a spreadsheet to plan a school charity day to maximise the money donated to charity.	Flowcharts and Control Simulations To use flowcharts to test and debug a program. To create a simulation of a room in which devices can be controlled. User Input To understand the different options of generating user input in 2Code. To understand how user input can be used in a program. Using Text-based Adventures To understand how 2Code can be used to make a text-based adventure game	Exploring Grammar Quizzes To explore the grammar quizzes. A Database Quiz To make a quiz that requires the player to search a database. Sharing Posts and Commenting To understand the importance of commenting on blogs. To peer-assess blogs against the agreed success criteria. To understand how and why blog posts and comments are approved by the teacher.	To plan the theme and content for a blog. Writing a Blog To understand how to write a blog and a blog post. To consider the effect upon the audience of changing the visual properties of the blog. To understand how to contribute to an existing blog.

	Data analysis Location sharing Phishing Digital footprint Password Print Screen Secure websites Inappropriate PEGI rating Screen time Spoof	Chart Expense Formula Wizard Profit Move cell tool Budget Dice tool Formula Bar Probability Count tool Format Cell Move cell tool	Function Input Launch Command Output Predict Repeat Repeat until Variable Properties Sequence Simulation Times Object Procedure Tab Selection	Audience Audio Case-Sensitive Clone Cloze Preview Quiz	Blog Commenting Vlog Archive Collaborate Approval Blog Post