Burton Leonard C of E Primary School

Vision

Computing Long Term Plan Overview

Cycle A	Y1	Y2	Y3/4	Y5/6
Autumn Digital Literacy	**Online Safety 1.1** Technology outside of school 1.9	**Online Safety 2.2** Effective Searching 2.5	**Online Safety 3.2** Email 3.5	**Online Safety 5.2** External Devices 5.9
Spring Computer Science	**Online Safety Revisit** Lego Builders 1.4 Coding 1.7	**Online Safety Revisit** 1.5 Maze Explorers Coding 2.1	**Online Safety Revisit** Touch Typing 3.4 Coding 3.1	**Online Safety Revisit** Game Creator 5.5 Coding 5.1
Summer Information Technology	**Online Safety Revisit** Animated Story Books 1.6 Spreadsheets 1.8	**Online Safety Revisit** Questioning 2.4 Spreadsheets 2.3	**Online Safety Revisit** Simulations 3.7 Spreadsheets 3.3	**Online Safety Revisit** 3D Modelling 5.6 Spreadsheets 5.3
Interdisciplinary Learning	Pictograms 1.3 – maths Animated Story Books - PSHE	Making Music 2.7 - Music Creating Pictures 2.6 – Art Christmas Cards	Graphing 3.8 - Maths Presenting 3.9 – Topic	Word Processing 5.8 – English/ Topic

Cycle B	Y1	Y2	Y3/4	Y5/6
Autumn Digital Literacy	**Online Safety 1.1** Technology outside of school 1.9	**Online Safety 2.2** Effective Searching 2.5	**Online Safety 4.2** Effective Searching 4.7	**Online Safety 6.2** Blogging 6.4
Spring Computer Science	**Online Safety Revisit** Lego Builders 1.4 Coding 1.7	**Online Safety Revisit** Maze Explorers 1.5 Coding 2.1	**Online Safety Revisit** Logo 4.5 Coding 4.1	**Online Safety Revisit** Networks 6.6 Coding 6.1
Summer Information Technology	**Online Safety Revisit** Animated Story Books 1.6 Spreadsheets 1.8	**Online Safety Revisit** Questioning 2.4 Spreadsheets 2.3	**Online Safety Revisit** Animation 4.6 Spreadsheets 4.3	**Online Safety Revisit** Quizzing 6.7 Spreadsheets 6.3
Interdisciplinary Learning	Pictograms 1.3 – maths	Making Music 2.7 - Music Creating Pictures 2.6 – Art Christmas Cards	Writing for Different Audiences 4.4 - English	Text Adventures 6.5 - English

EYFS – knowledge and skills

The EYFS Framework is structured very differently to the National Curriculum as it is organised across seven areas of learning rather than subjects. The most relevant statements for computing are taken from the following areas of learning:

- 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 and wellbeing, sensible amounts of 'screen time'
- Physical Development: develop their small motor skills so that they can use a range of tools competently, safely, confidently

Expressive Arts and Design: explore, use and refine a variety of artistic effects to express ideas and feelings.

In early years, many topics can be explored using technology to produce creative work and solve problems. Children will begin by developing the foundations of computing skills that will give them a sound basis to explore topics using technology and to be ready for progressing through the Computing curriculum. Familiarity with some of these skills will reduce the cognitive load on children in future learning and enable them to make progress more rapidly. Units are not mandatory; they are simply provided to give a breadth of experiences to select from and to link with topics being taught in class.

Autumn	**Mouse and keyboard skills** - Holding a computer mouse with fingers on the correct buttons - Use a mouse to make the cursor move around - Click the correct mouse button to play games on the computer - Click and drag objects (developing hand-eye coordination skills and fine- motor skills to operate a mouse effectively) - Find all the letters of the alphabet on a keyboard and numbers - Begin to put spaces between words - Simple typing, matching lower case and upper case letters activities (as most keyboards the children encounter will contain capital letters)
Spring 1	**Drawing skills** - Select colours when painting on the computer - Try the different tools that I can draw with on the computer and draw a picture - Use a computer to draw with different widths of pens - Introduce the undo and erase button and practice using them - Use a touch screen device purposefully - Draw on a computer using a mouse

Spring 2	**Robots** - Talk about where I am moving a toy vehicle whilst I am moving it and describe the route taken by a toy vehicle - Follow directions to make a route for a toy vehicle - Follow my own plan for where a toy vehicle should move - Make a floor robot move - control the forwards, backwards and rotation of a floor robot one step at a time - Program a 3-step route for a floor robot - Predict where a floor robot will end up when given the instructions for a 2 or 3 step route - Plan a route for a floor robot and carry out these instructions one step at a time and more than one step at a time **Sounds** - Make music using the computer/ add sound effects to my work - Use a device to record myself speaking and play sounds in the background
Summer 1	**Quizzes** - Understand what a quiz is - Complete a multi-choice quiz - Complete a sequencing quiz - Begin to type answers to quiz questions - Complete a matching quiz - Complete a sorting and sequencing quiz - Play games that ask me questions **Hardware** - Understand why having clean hands is important when using shared devices - Understand why it is not sensible to eat and drink whilst using a technological device - Understand why I need to take care with electronic devices and their plugs/wires - Take appropriate actions when I need to carry a device to a different location - Use devices with care - Identify the technology used around me - Identify the parts of a computer and what they are used for

Summer 2	**Technology around us** - Talk about what technology is used at home - Talk about what technology is used outdoors - Talk about what technology is used in the world around me - **Safety and privacy** - Explain how work on my computer belongs to me and other peoples work belongs to them - Explain what it means for something to be private - Talk about how my body feels when I am not comfortable with something - Know who can help me if I am feeling worried - Show that I understand how to be kind to others Choose activities in my free time that help me to be healthy

Curriculum Progression KS1

		Autumn Term	Spring Term	Summer Term
YEAR 1	Topic/skill	Online Safety Tech Outside School	Lego Builders Coding	Animated Story Books Spreadsheets
	High quality texts			
	Enrichment Opportunities			
	Cross-curricular links	Pictograms 1.3 – maths	Pictograms 1.3 – maths	Pictograms 1.3 – maths
	School vision, values & curricular ribbons			
	British Values			
	Knowledge (National Curriculum Links)	**Unit 1.1 – Online Safety** • Knows how to log in safely. • Knows how to navigate to a document area where saved work by child can be found. • Knows how to use search to locate applications or resources on a platform such as Purple Mash. • Knows how to enhance work by adding multimodal items such as text and images. • Knows how to open, save and print work. • Knows the importance of logging out of an account. **Unit 1.9 – Tech Outside School** • Knows that technology is a use of knowledge to invent new devices or tools.	**Unit 1.4 – Lego Builders** • Knows how to compare the effects of adhering strictly to instructions when completing tasks without complete instructions. • Knows how to follow and create simple instructions on the computer. • Knows that the order of instructions affects the end result for a given instructional task. **Unit 1.7 – Coding** • Knows what instructions are and can predict what might happen when they are followed. • Knows how to plan and make a simple computer program e.g. fish moves right, crab moves up.	**Unit 1.6 – Animated Story Books** • Knows what e-books are. • Knows of software such as 2Create a Story that allows users to create interactive stories. • Knows how to add animation to an interactive story. • Knows how to add sound, including voice recordings and music to a story they have created using software. • Beginning to know how to work on more complex digital stories, including adding backgrounds, copying and pasted pages. • Knows how to share digital stories with others such as using Digital Display Boards. **Unit 1.8 – Spreadsheets**

		• Knows that throughout history, technology has made people's lives easier. • Knows that technology is used within school and outside of school. • Knows where examples of technology can be found both in and out of school.	• Knows what objects, actions and backgrounds are within a coding environment. • Knows what an event is and knows how to use an event to control an object. • Beginning to know how code executes when a program is run.	• Knows what a spreadsheet program environment looks like including cells, rows and columns. • Knows basically what a spreadsheet program can help do. • Knows how to enter data into spreadsheet cells. • Knows how to add images to cells. • Knows how to use some tools within spreadsheets e.g. with 2Calulate can use lock cell, move cell, speak and count.
	Skills	• Children understand what is meant by technology and can identify a variety of examples both in and out of school. They can make a distinction between objects that use modern technology and those that do not e.g. a microwave vs. a chair. • Children understand the importance of keeping information, such as their usernames and passwords, private and actively demonstrate this in lessons. Children take ownership of their work and save this in their own private space such as their My Work folder on Purple Mash	• Children understand that an algorithm is a set of instructions used to solve a problem or achieve an objective. They know that a computer program turns an algorithm into code that the computer can understand • Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The Wrong Sandwich in Purple Mash and can write their own simple algorithm, e.g. Colouring in a Bird activity. Children know that an unexpected outcome is due to the code they have created and can make logical attempts to fix the	• Children are able to sort, collate, edit and store simple digital content e.g. children can name, save and retrieve their work and follow simple instructions to access online resources, use Purple Mash 2Quiz example (sorting shapes), 2Code design mode (manipulating backgrounds) or using pictogram software such as 2Count.

			code, e.g. Bubbles activity in 2Code. • When looking at a program, children can read code one line at a time and make good attempts to envision the bigger picture of the overall effect of the program. Children can, for example, interpret where the turtle in 2Go challenges will end up at the end of the program. •	
	Vocabulary	Alert Avatar Button Calculations Cell Clip art Column Delete Device File name Icon image Log in Log out Menu Notification Password Private	Action Algorithm Background Code Command Computer Debugging Event Execute Instructions Program	Animation Background Button Calculations Clip-art Column E-book Edit Font Lock cell Row Sound Sound effect Text Value

Curriculum Progression KS1

YEAR 2		Autumn Term	Spring Term	Summer Term
	Topic/skill	Online Safety Effective Searching	Maze Explorers Coding	Questioning Spreadsheets
	High quality texts			
	Enrichment Opportunities			
	Cross-curricular links	Making Music 2.7 – Music Creating Pictures 2.6 (Christmas/ Easter Cards)	Making Music 2.7 – Music Creating Pictures 2.6 (Christmas/ Easter Cards)	Making Music 2.7 – Music
	School vision, values & curricular ribbons			
	British Values			
	Knowledge (National Curriculum Links)	**Unit 2.2 – Online Safety** • Knows how searches can be refined when searching digitally and therefore attempts refining when searching. • Knows that digitally created work can be shared with others e.g. Purple Mash Display Boards. • Has knowledge and understanding about sharing more globally on the Internet. • Knows that email is a type of communication tool. • Knows how to open and send simple online communications in the form of email e.g. 2Email (virtual email client). • Knows that there is an appropriate way to communicate with others in an online situation.	**Unit 1.5 – Maze Explorers** • Knows the functionality of the direction keys in 2GO. • Knows how to create and debug a set of simple instructions (algorithm). • Knows how to use the additional direction keys within 2Go as part of an algorithm. • Knows how to change and extend the algorithm list in 2Go. **Unit 2.1 – Coding** • Knows what an algorithm is and can explain that it is a set of instructions and that algorithms follow a sequence. • Knows how to create a computer program using an algorithm.	**Unit 2.4 – Questioning** • Knows that pictograms provide limited information. • Knows that there are other data handling tools that can give more information than pictograms. • Knows how to use yes/no questions to separate information. • Knows how to construct a binary tree to identify items. • Knows how to use a binary tree database (such as 2Question), to answer questions. • Knows how to use a database to answer more complex search questions. • Knows how to use a search feature at a basic level when

		• Knows that information put online leaves a digital footprint. • Knows some steps that can be taken to keep personal data and hardware secure. **Unit 2.5 – Effective Searching** • Knows the meaning of key Internet and searching terms. • Knows the basic parts of a web search engine page. • Knows how to navigate a web search results page. • Knows how to search the Internet to some degree for answers to a quiz. • Knows the premise of what effective Internet searching is.	• Knows how to create a computer program from a given design. • Knows that collision detection is an event type in coding. • Knows how to design an algorithm that follows a timed sequence. • Knows that different objects within the coding environment have different properties. • Knows that there are different events in coding and knows what some of these events are. • Knows the function of buttons in the coding environment. • Knows how to interpret and debug simple programs.	trying to locate data within a database such as 2Investigate. **Unit 2.3 – Spreadsheets** • Secures knowledge from prior year when spreadsheets were introduced (See unit 1.8). • Knows how to use prior learning to perform composite task of creating a counting machine using software such as 2Calculate (image, lock, move cell, speak and count tools). • Knows how to copy, cut and paste in spreadsheet software such as 2Calculate. • Knows what totalling tools are and how to use them. • Knows how to use a spreadsheet to perform calculations for purpose. For example, adding and totalling money. • Knows how to use some tools within a spreadsheet to support calculations. For example, using the 'equals' tool in 2Calculate to check calculations. • Knows how to create a manual block graph within a spreadsheet from data.
	Skills	• Children can effectively retrieve relevant, purposeful digital content using a search engine. They can apply their learning of effective searching beyond the classroom. They can	• Children can explain that an algorithm is a set of instructions to complete a task. When designing simple programs, children show an awareness of the need to be precise with their algorithms	• Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches.

		share this knowledge, e.g. 2Publish example template. Children make links between technology they see around them, coding and multimedia work they do in school e.g. animations, interactive code and programs. • Children know the implications of inappropriate online searches. Children begin to understand how things are shared electronically such as posting work to the Purple Mash display board. They develop an understanding of using email safely by using 2Respond activities on Purple Mash and know ways of reporting inappropriate behaviours and content to a trusted adult.	so that they can be successfully converted into code • Children can create a simple program that achieves a specific purpose. They can also identify and correct some errors, e.g. Debug Challenges: Chimp. Children's program designs display a growing awareness of the need for logical, programmable steps. • Children can identify the parts of a program that respond to specific events and initiate specific actions. For example, they can write a cause and effect sentence of what will happen in a program.	Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound.
	Vocabulary	Attachment Digital Footprint Display board E-mail Internet Search Search Engine Sharing	Action Button Algorithm Challenge Command Design Mode Collision Detecting Event Debug Nesting Direction Instruction Left	Avatar Backspace Binary Tree Cells Collate Columns Copy and paste Data Database Delete Equals tool Image toolbox Lock tool

			Right Route Undo Unit	Move cell Pictogram Question Rows Speak tool Spreadsheet

Curriculum Progression KS2

YEAR 3/4 (CYCLE A)		Autumn Term	Spring Term	Summer Term
	Topic/skill	Online Safety Email	Touch Typing Coding	Simulations Spreadsheets
	High quality texts			
	Enrichment Opportunities			
	Cross-curricular links	Graphing 3.8 – Maths Presenting 3.9 - Topic	Graphing 3.8 – Maths Presenting 3.9 - Topic	Graphing 3.8 – Maths Presenting 3.9 - Topic
	School vision, values & curricular ribbons			
	British Values			
	Knowledge (National Curriculum Links)	**Unit 3.2 – Online Safety** • Knows what makes a safe password and how to keep it safe. • Knows the main outcomes of not keeping passwords safe. • Knows all the common ways the Internet enables people to effectively communicate.	**Unit 3.4 – Touch Typing** • Know typing terminology including names of fingers. • Know the home, top and bottom row sections on a keyboard. • Knows the keys typed with left hand. • Knows the keys typed with right hand.	**Unit 3.7 – Simulations** • Know that a computer simulation can represent real and imaginary situations. • Know advantages and problems of using simulations. • Know how to use a simple simulation to try out different options and test predictions. • Begin to know how to evaluate simulations by

		• Know that a blog can be used to help communicate with a wider audience. • Know how to contribute to a blog with clear and appropriate messages. • Know that some information held on websites may not be accurate or true. • Beginning to know how to search the Internet and how to think critically about the results returned. • Know why there are age restrictions on digital media and devices. • Know where to turn to for help if they see inappropriate content or have inappropriate contact from others. **Unit 3.5 – Email** • Know the different methods of communication and know the strengths and weaknesses of his form. • Know how to open and responding to email. • Know how to use an address book to write an email. • Know how to use an email environment safely including the importance of the draft feature. • Know how to add attachments to an email. • Know what CC means and how to use it.	• Knows the correct way to sit at a keyboard. **Unit 3.1 – Coding** • Knows what a flowchart is and how flowcharts are used in computer programming. • Knows how to use a flowchart to create a computer program. • Knows that there are different types of timers used in coding environments such as 2Code. • Knows which timer should be used for a given purpose. • Know what a repeat command is and how to use the repeat command. • Know how to create a range of programs using coding knowledge. • Know how to run, test and debug their own programs. • Know what nesting is and that this should be considered when debugging. • Know how to change attributes/properties of any objects in a program they have made.	comparing them with real simulations and considering their usefulness. **Unit 3.3 – Spreadsheets** • Know how to create tables of data within a spreadsheet. • Know how to use a spreadsheet program to automatically create charts and graphs from data. • Know how to use various features within a spreadsheet to support solutions to calculations. For example, 'more than', 'less than', and 'equals'. • Know how to describe a cell location in a spreadsheet. • Know how to find specified locations in a spreadsheet.

	Skills	• Children demonstrate the importance of having a secure password and not sharing this with anyone else. Furthermore, children can explain the negative implications of failure to keep passwords safe and secure. They understand the importance of staying safe and the importance of their conduct when using familiar communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact	• Children can turn a simple real-life situation into an algorithm for a program by deconstructing it into manageable parts. Their design shows that they are thinking of the desired task and how this translates into code. Children can identify an error within their program that prevents it following the desired algorithm and then fix it • Children demonstrate the ability to design and code a program that follows a simple sequence. They experiment with timers to achieve repetition effects in their programs. Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects. • Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, repetition and use of timers. They make good attempts	• Children can carry out simple searches to retrieve digital content. They understand that to do this, they are connecting to the internet and using a search engine such as Purple Mash search or internet-wide search engines. • Children can collect, analyse, evaluate and present data and information using a selection of software, e.g. using a branching database (2Question), using software such as 2Graph. Children can consider what software is most appropriate for a given task. They can create purposeful content to attach to emails, e.g. 2Respond.

			to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately • Children can list a range of ways that the Internet can be used to provide different methods of communication. They can use some of these methods of communication, e.g. being able to open, respond to and attach files to emails using 2Email. They can describe appropriate email conventions when communicating in this way	
	Vocabulary	Address Book Appropriate Attachment BCC CC Blog Communication Compose E-mail Inappropriate Inbox Internet Password Password Permission Personal Information Personal Information	Action Alert Algorithm Background Bug Button Click event Code Collision Detection Command Debug/Debugging Keys Posture Space bar Typing Event	Advance Mode Analysis Bar Graph Cell Address Columns Data Decision Equal to Equals Evaluation Less than Modelling More than Pie Chart Quiz Tool Rows Simulation

		Reliable Source Reputable Source Save to Draft Spoof Trusted Contact Verify Vlog Website	Flowchart Implement Input Interval Nesting Object Predict Properties Repeat Run Scene Sequence Test Timer Turtle Object	Spin Tool Spreadsheet Table

YEAR 3/4 (CYCLE B)		Autumn Term	Spring Term	Summer Term
	Topic/skill	Online Safety Effective Searching	Logo Coding	Animation Spreadsheets
	High quality texts			
	Enrichment Opportunities			
	Cross-curricular links	Writing for different audiences 4.4 - English	Writing for different audiences 4.4 - English	Writing for different audiences 4.4 - English
	School vision, values & curricular ribbons			
	British Values			
	Knowledge (National Curriculum Links)	**Unit 4.2 – Online Safety** • Know that information put online leaves a digital footprint	**Unit 4.5 – Logo** • Know the structure of the coding language of Logo.	**Unit 4.6 – Animation** • Know how animations are created by hand.

		or trail and can expand on prior years' scope of this fact. • Know some of the ways children can protect themselves from online identity theft. • Know that information put online by users could be used for identity theft. • Know the main risks and benefits of installing software and applications. • Know that copying work of others and presenting it as their own is plagiarism. • Knows the consequences of plagiarism. • Knows appropriate behaviour when participating or contributing to collaborative online projects for learning. • Know some of the main positive and negative influences technology has on health and the environment. • Knows the importance of balancing screen time with non-screen time. **Unit 4.7 – Effective Searching** • Know how to find information from a search results page. • Know how to search effectively to find out information.	• Know how to input simple instructions in Logo language environment. • Know how to create letter shapes using Logo. • Know what the repeat function in Logo is and its usefulness. Use it to create shapes such as squares. • Know what procedures are and use this knowledge to build procedures in Logo. **Unit 4.1 – Coding** • Begin to know what selection is in computer programming. • Know how an IF statement works. • Know how to interpret an IF statement and therefore know how to create a program that includes an IF statement. • Know how to use co-ordinates in computer programming. • Know what the 'repeat until' command is. • Know how an IF/ELSE statement works. • Know what a variable is in programming. • Know how to use variables within their programs. • To know how to create a playable game using a block coding environment.	• Know how animations are created using computers. • Know what onion skinning is when referring to animation. • Know that animations can be enhanced using features in software such as background and sounds. • Know what 'stop motion' animation is. **Unit 4.3 – Spreadsheets** • Know what cell formatting is. • Know how to format cells as currency, percentage, decimal or fraction. • Know how to use formula wizard tools. • Know how to combine spreadsheet tools to create a purposeful spreadsheet e.g. a timed times table test. • Know how to use a spreadsheet to model a real-life situation e.g. budget planner. • Know how to add a formula to a cell in order to create automatic calculations.

		• Know how to identify if an information source is true and reliable.		
	Skills	• Children can explore key concepts relating to online safety using concept mapping such as 2Connect. They can help others to understand the importance of online safety. Children know a range of ways of reporting inappropriate content and contact	• When turning a real-life situation into an algorithm, the children's design shows that they are thinking of the required task and how to accomplish this in code using coding structures for selection and repetition. Children make more intuitive attempts to debug their own programs. • Children's use of timers to achieve repetition effects are becoming more logical and are integrated into their program designs. They understand 'IF statements' for selection and attempt to combine these with other coding structures including variables to achieve the effects that they design in their programs. As well as understanding how variables can be used to store information while a program is executing, they are able to use and manipulate the value of variables. Children can make use of user inputs and outputs such as 'print to screen'. e.g. 2Code.	• Children understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level. • Children are able to make improvements to digital solutions based on feedback. Children make informed software choices when presenting information and data. They create linked content using a range of software such as 2Connect and 2Publish+. Children share digital content within their community, i.e. using Virtual Display Boards.

			• Children's designs for their programs show that they are thinking of the structure of a program in logical, achievable steps and absorbing some new knowledge of coding structures. For example, 'IF' statements, repetition and variables. They can trace code and use step-through methods to identify errors in code and make logical attempts to correct this. In programs such as Logo, they can 'read' programs with several steps and predict the outcome accurately • Children recognise the main component parts of hardware which allow computers to join and form a network. Their ability to understand the online safety implications associated with the ways the internet can be used to provide different methods of communication is improving.	
	Vocabulary	Adfly Attachment Citation Collaboration Cookies Copyright Digital Footprint Malware		

		Phishing Plagiarism Ransomware Spam SMART Rules Virus Watermark Balanced View Easter eggs Internet Key Words Reliability Results Page Search Engine		

YEAR 5/6 (CYCLE A)		Autumn Term	Spring Term	Summer Term
	Topic/skill	Online Safety External Devices	Game Creator Coding	3D Modelling Spreadsheets
	High quality texts			
	Enrichment Opportunities			
	Cross-curricular links	Word Processing 5.8 – English/Topic	Word Processing 5.8 – English/Topic	Word Processing 5.8 – English/Topic
	School vision, values & curricular ribbons			
	British Values			

	Knowledge (National Curriculum Links)	**Unit 5.2 – Online Safety** • Know in more detail from prior learning of the impact that sharing digital content can have. • Know how to think critically about information they share online. • Know responsibilities they have for themselves and others regarding online behaviour. • Know and have developed knowledge from prior years about maintaining secure passwords. • Know about image manipulation using software and the advantages or disadvantages of this when shared online. • Know what is meant by appropriate and inappropriate text, photographs and videos. • Know about the impact of sharing media such as photographs and videos online. • Know about the importance of citing content online from others and know how to do this. • Know how to select keywords and search techniques to find relevant information to increase reliability. **Unit 5.9 – External Devices** • Know what a host means in the context of 2Code	**Unit 5.5 – Game Creator** • Know what some of the main elements are that make a successful game. • Know how to plan a playable game. • Know how to incorporate media such as sound and images. • Know how to manipulate media including adding animation. • Know how to successfully evaluate games. **Unit 5.1 – Coding** • Begin to know how to simplify code in order to make own programming more efficient. • Know how to create a simple simulation using 2Code. For example, a traffic light sequence. • Know what decomposition and abstraction are in computer science. • Know the need to start coding at a basic level of abstraction to remove superfluous details from own programs. • Know how to use decomposition to make a plan of a real-life situation. • Know what a function is in coding and know how to use a function in own program to make it more efficient.	**Unit 5.6 – Modelling** • Know what modelling software is and the skills of computer aided design. • Know the effect of moving points when designing. • Know how to design a 3D model to fit certain criteria. • Know how to refine and print a model. **Unit 5.3 – Spreadsheets** • Know how to use formulae within a spreadsheet to convert measurements of length and distance. • Know how to use more advanced formulae effectively. For example, to use formulae to calculate area and perimeter of shapes. • Know how to create formulae that use text variables. • Know how to use tools within a spreadsheet e.g. 2Calculate and the count tool to answer hypotheses. For example, to answer hypotheses about common letters in use.

		Purple Chip and relate this to everyday technology e.g. console and wireless controller. • Know what is meant by external device in relation to a host device. • Know what is meant by an application (App). • Know that a program can be created that will interact with an external device based on inputs and outputs available on the device and what has been coded on the host device. E.g. sound detection on the device sends input to the program triggering code to output alert noise to the device (Simple intruder alarm). • Know how interaction between an external device and host can be related to real world scenarios, recognising its usefulness. • Know the extent of functionality with Purple Chip including the code blocks available. • Know how to utilise the functionality of Purple Chip when designing own program.	• Know what different variable types are. • Know what strings are and how to use them. • Know how to set and change variable values in code. • Know some of the common ways that text variables can be used in programming. • Know and use concatenation in own programs.	
	Skills	• Children have a secure knowledge of common online safety rules and can apply this by demonstrating the safe and respectful use of a few different technologies and online	• Children may attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts. Children are able to test and debug	• Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a

		services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others.	their programs as they go and can use logical methods to identify the approximate cause of any bug but may need some support identifying the specific line of code. • Children can translate algorithms that include sequence, selection and repetition into code with increasing ease and their own designs show that they are thinking of how to accomplish the set task in code utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design. • When children code, they are beginning to think about their code structure in terms of the ability to debug and interpret the code later, e.g. the use of tabs to organise code and the naming of variables • Children understand the value of computer networks but are also aware of the main dangers. They recognise what personal	webpage is and the information it contains. • Children are able to make appropriate improvements to digital solutions based on feedback received and can confidently comment on the success of the solution. e.g. creating their own program to meet a design brief using 2Code. They objectively review solutions from others. Children are able to collaboratively create content and solutions using digital features within software such as collaborative mode. They are able to use several ways of sharing digital content, i.e. 2Blog, Display Boards and 2Email.

			information is and can explain how this can be kept safe. Children can select the most appropriate form of online communications contingent on audience and digital content, e.g. 2Blog, 2Email, Display Boards	
	Vocabulary			

YEAR 5/6 (CYCLE B)		Autumn Term	Spring Term	Summer Term
	Topic/skill	Online Safety Blogging	Networks Coding	Quizzing Spreadsheets
	High quality texts			
	Enrichment Opportunities			
	Cross-curricular links	Text Adventures 6.5 - English	Text Adventures 6.5 - English	Text Adventures 6.5 - English
	School vision, values & curricular ribbons			
	British Values			
	Knowledge (National Curriculum Links)	**Unit 6.2 – Online Safety** • Know the benefits and risks of mobile devices broadcasting the location of the user/device, e.g., apps accessing location. • Know what secure sites are.	**Unit 6.6 – Networks** • Know the difference between the World Wide Web and the Internet. • Know what a WAN and LAN is and the key differences between them.	**Unit 6.7 – Quizzing** • Know how to use create activities for younger children using software such as 2DIY. • Know about different question types within quizzing software tools such as 2Quiz.

		• Know that secure sites will have industry standard seals of approval. • Build on knowledge of Digital Footprints. For example, know how and why people use their information. • Build on knowledge of appropriate online behaviours and how this can protect themselves and others from possible online dangers. For example, the dangers of promoting inappropriate content online. • Have greater knowledge of how to make more informed choices of how free time is used. • Know the effects on individual health when having too much screen time. **Unit 6.4 – Blogging** • Know the purpose of writing a blog. • Know the features of successful blog writing. • Know how to plan a blog. • Know how to write a blog. • Know how to write a blog post. • Know that the way information is presented within a blog has an impact upon the audience. • Know how to contribute to others' blogs.	• Know how a school network accesses the Internet. • Know the history of the Internet. • Know some of the major changes in technology which have taken place in their lifetime. **Unit 6.1 – Coding** • Know how to implement a game which includes timers and a score. • Know what the launch command is. • Build on knowledge of functions. • Know how to use multiple functions in own program. • Know how to arrange code in multiple tabs. • Know how to develop creativity when coding to generate novel effects. • Know the different options of generating user input in 2Code. • Know how to attribute variables to user input. • Know the need to code for all possibilities when using user inputs. • Know how 2Code can be used to make a textbased adventure game.	• Know how to give and respond to feedback based on quizzes made. • Know how to create their own grammar games. • Know how to use multiple pieces of software to enhance a quiz. For example, creating a quiz that requires children to look up information on a database. **Unit 6.3 – Spreadsheets** • Know how to create a spreadsheet to help answer a mathematical question relating to probability. • Know how to take 'copy' and 'paste' shortcuts. • Know how to problem solve during mathematical investigations when using spreadsheets by using tools such as the 'Count tool'. • Know how to create a spreadsheet to produce computational models. For example, creating a spreadsheet that works out discounts and final price sales. Children will know how to use advanced formula to assist with this. • Know how to use a spreadsheet to help plan actions. For example, create a spreadsheet to plan

		• Know the importance of having an approval process when creating blog content or modifying it. • Know from Online Safety knowledge that content within blogs applies. For example, children know the issues surrounding inappropriate posts and cyberbullying.	• Know with improving understanding of how they can alter existing programs to reflect their own ideas. • Building on existing knowledge of debugging, children know how to debug more effectively.	how to spend pocket money and the effect of saving
	Skills	• Children demonstrate the safe and respectful use of a range of different technologies and online services. They identify more discreet inappropriate behaviours through developing critical thinking, e.g. 2Respond activities. They recognise the value in preserving their privacy when online for their own and other people's safety	• Children are able to turn a more complex programming task into an algorithm by identifying the important aspects of the task (abstraction) and then decomposing them in a logical way using their knowledge of possible coding structures and applying skills from previous programs. Children test and debug their program as they go and use logical methods to identify the cause of bugs, demonstrating a systematic approach to try to identify a particular line of code causing a problem. • Children translate algorithms that include sequence, selection and repetition into code and their own designs show that they are thinking of how to accomplish the	• Children readily apply filters when searching for digital content. They are able to explain in detail how credible a webpage is and the information it contains. They compare a range of digital content sources and are able to rate them in terms of content quality and accuracy. Children use critical thinking skills in everyday use of online communication. • Children make clear connections to the audience when designing and creating digital content. The children design and create their own blogs to become a content creator on the Internet, e.g. 2Blog. They are able to use criteria to evaluate the quality of digital solutions and are able to identify

			set task in code utilising such structures, including nesting structures within each other. Coding displays an improving understanding of variables in coding, outputs such as sound and movement, inputs from the user of the program such as button clicks and the value of functions. • Children are able to interpret a program in parts and can make logical attempts to put the separate parts of a complex algorithm together to explain the program as a whole. • Children understand and can explain in some depth the difference between the internet and the World Wide Web. Children know what a WAN and LAN are and can describe how they access the Internet in school	improvements, making some refinements.
	Vocabulary			