St John's CE (C) Primary Computing Whole School Curriculum – 2024-2025

Please note the units below do not always fully fit into a half term and will need to be started as soon as the previous unit has finished.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
EYFS	Introduce use of iPad, laptops, interactive whiteboard and cameras Taking selfies Purple Mash: Simple City Map *Paint* Mashcam	Use beebots and remote-control cars Purple Mash: Paint mashcam	Safer Internet Day Purple Mash passwords Paint Mashcam 2email	Ipad camera Purple Mash: Maths City garden Paint	Purple Mash Maths city Paint	Paint Mashcam: Explore 2publish Charanga: music composition
Year 1	Unit 1.1. Online Safety and PM (4 lessons) Unit 1.2 Grouping and Sorting (2 lessons)	Unit 1.3 Pictograms (3 lessons) Unit 1.4 Lego Builders (3 lessons)	Unit 1.5 Maze Explorers (4 lessons)	Unit 1.6 Animated Stories (5 lessons)	Unit 1.7 Coding (6 lessons)	Unit 1.7 Coding (6 lessons) Unit 1.9 Tech Outside School (2 lessons)
Year 2	Unit 2.2 Online Safety (3 lessons) Unit 2.5 Effective Searching (3 lessons)	Unit 2.1 Coding (6 lessons)	Unit 2.4 Questioning (5 lessons) Unit 2.6 Creating pictures (5 lessons)	Unit 2.3 Spreadsheets (6 lessons)	Unit 2.8 Presenting Ideas (4 lessons)	Unit 2.1 Coding RECAP (6 lessons)
Year 3	Unit 3.1 Coding (6 lessons) Unit 3.2 Online Safety (3 lessons)	Unit 3.3 Spreadsheets (6 lessons)	Unit 3.6 Branching databases (4 lessons)	Unit 3.5 Email (6 lessons)	Unit 3.9 Presenting (MS PowerPoint) (6 lessons	Unit 3.10 Microbits (4 lessons) Unit 3.1 Coding RECAP

		Unit 3.4 Touch Typing (4 lessons)				(6 lessons)
Year 4	Unit 4.1 Coding (6 lessons) Unit 4.8 Hardware Investigators (2 lessons)	Unit 4.2 Online Safety (4 lessons) Unit 4.7 Effective searching (3 lessons)	Unit 4.6 Animation (3 lessons) Unit 4.5 Logo (4 lessons)	Unit 4.10 Intro to AI (4 lessons)	Unit 4.11 – Mircrobits (4 lessons)	Unit 4.1 Coding (6 lessons) RECAP
Year 5	Unit 5.2 Online Safety (3 lessons) Unit 5.1 Coding (6 lessons)	Unit 5.3 Spreadsheets (6 lessons)	Unit 5.4 Databases (4 lessons)	Unit 5.5 Game Creator (5 lessons)	Unit 5.8 Word Processing MS Word (8 lessons)	Unit 5.10 – Microbits (4 lessons)
Year 6	Unit 6.2 Online Safety (3 lessons) Unit 6.1 Coding (6 lessons)	Unit 6.5 Text Adventures (4 lessons)	Unit 6.4 Blogging (4 lessons)	Unit 6.6 Networks (3 lessons)	Unit 6.8 Binary (4 lessons)	Unit 6.9 Spreadsheets MS Excel (8 weeks)

Computing Domains:

Computer Science	Information Technology	Digital Literacy (including e-safety)
Understanding data representations and structures; algorithms, debugging, programming and coding.	The knowledge to create digital artefacts such as animations and 3D models. Providing knowledge of how technology is used in society and by specific sectors of it. The advantages of using digital methods to collate and share information	Knowledge of how to use digital technologies safely and effectively including creation, retrieval and sharing of information and other digital media.

Computing Curriculum Narrative

EYFS

Computing in the EYFS can mean:

- ✓ Taking a photo with a camera or tablet
- ✓ Searching for information on the internet
- ✓ Playing games on the interactive whiteboard
- ✓ Exploring an old typewriter or mechanical toys
- ✓ Using a Beebot
- ✓ Watching a video clip
- ✓ Listening to music
- ✓ Knowing the importance of e safety

Key Stage 1

Key stage 1 Pupils should be taught:

- ✓ 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.

Key Stage 2

Key stage 2 pupils should be taught:

- ✓ 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
- ✓ use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.

Computing in EYFS

Subject:	Computing
Year Group:	Reception

Prior/Background Knowledge:

Children should start school: With some experience of using technology- tv, ipad, laptop, phone, camera etc

They should remember some of the rules to using equipment without an adult having to remind them.

Match their developing

ELGs linked to computing skills

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.

Creating with materials: Safely use and explore a variety of materials, tools and techniques, experimenting with colour, design, texture, form and function.

Autumn 1:

Introduce use of **iPad, laptops, interactive whiteboard** and **cameras**

Home corner: Children to have access to calculators, cameras, phones etc to use in their play

Technology all around us: children to discover the technology we use every day. Understand that technology can solve a problem. Homework to list all the technology in their home.

Ipads: children to take selfies for our welcome display

Purple Mash:

To explore the Simple City Map

Paint- homes and my family, Autumn tree, leaves and acorn, Harvest basket and veg box, Rangoli patterns/diva lamp

English- Purple Mash fruit bowl painting for Handa's Surprise **Mashcam:** Little Red Riding Hood

Autumn 2:

Use beebots and remote-control cars- to follow routes and maps. Linked to transport topic.

Purple Mash:

Simple City- garage Maths City- space

Paint- transport, fireworks, Hanukah, Christmas tree, stocking, Santa and plate, Pumpkin, Poppy

Use the **mashcam** to create a calendar to go home.

Mashcam: Astronaut/rocket and elf/santa.

Spring 1:

Safer Internet Day

Purple Mash:

Learn how to use **passwords**

Design a gingerbread man and other food. Explore the café in Simple City.

Paint: Winter tree, Chinese fan, lantern and dragon, design a superhero and a cape, people who help us.

Mashcam: superhero

2email: Email a local hero to find out more.

Spring 2:

Children will use the ipads to take photos of what they observe in the garden and also to track progress in growth of beans/frogspawn

Purple Mash:

Maths City garden

Paint: Spring tree, Garden painting + places garden, Easter egg Seder plate (Passover),

English: Purple Mash paint a castle (fantasy stories) Jack and beanstalk

Summer 1:

Purple Mash:

Maths city farm **Paint:** animals

Summer 2:

Purple Mash:

Paint: sea creatures, Summer tree, rainbow (Rainbow Day), pirate island and rock pool (places), Pirates etc,

Mashcam: Diver/pirate/submarine

English:

Explore 2publish- create own underwater adventure story

Charanga: Using ICT to compose a song as part of the music unit of work

ONGOING:

QR codes to listen to stories on iPads.

The IWB will be available throughout the day with different games on:

Purple mash: **Maths**: paint numbers and represent numbers, ladybird doubles, addition, number bonds, 1 more 1 less, shop on maths City, counting quizzes, ordering numbers quizzes, measuring, position and direction **Phonics:** Painting the letters, alphabet pairs, paint- clock, shapes and shape pictures

Phonics play

Paint for Eid mosque and mendhi, birthday cake- when a class birthday helping hands design a cake for them, wedding cake- if relevant

Keeping safe:

PSED: Children know and talk about the different factors that support their overall health and wellbeing: sensible amounts of screen time. Parents are also told about the importance of children playing age-appropriate games

Safer Internet Day Children will learn:

- What is the internet: **homework** to list how they use the internet at home.
- To always have a grown-ups permission to use the internet
- Who to tell if they feel unsafe on the internet.
- To never tell anyone online personal details
- To never give their password to anyone.

Children will receive their Purple Mash passwords to help put this rule into practice.

Throughout the week read a variety of stories at story time to reiterate the safety rules: **digital duck (safer internet site), Old Macdonald had a phone, #Goldilocks, Chicken Clicking, Buddy the Dog (Twinkl)**

Key computing vocabulary:

Computer, ipad, laptop, phone, mouse, keyboard, selfie, password, safe, Internet, technology, electricity, charging

Continuous Provision:

IWB- constant

Ipads x1 afternoon a week **laptops** x1 day a week

St John's Computing Medium Term Planning (using Purple Mash resources)

Yr group, Unit Title	Domain	Previous Learning	National Curriculum – Learning Questions	Tier 2 Vocabulary	Tier 3 Vocabulary
Year 1 Unit 1.1 Online Safety and PM	Digital Literacy	EYFS: • Use of 2Dos • Saving, opening and editing work • Sharing work • Copying and pasting • Mouse, keyboard and device skills	1.• Children can log in to Purple Mash using their own login. • Children have created their own avatar and understand why they are used. • Children can add their name to a picture they created on the computer. • Children are beginning to develop an understanding of ownership of work online. • Children can save work into the My Work folder in Purple Mash and understand that this is a private saving space just for their work. 2. • Children can find their saved work in the Online Work area of Purple Mash. • Children can find messages that their teacher has left for them on Purple Mash. • Children can search Purple Mash to find resources. 3. • Children will be able to use the different types of topic templates in the Topics section confidently. • Children will be confident with the functionality of the icons in the topic templates. • Children will know how to use the different icons and writing cues to add pictures and text to their work. 4. • Children have explored the Tools section on Purple Mash and become familiar with some of the key icons: Save, Print, Open and New. • Children have explored the Games section and looked at Table Toons (2x tables). • Children can log out of Purple Mash when they have finished using it and know why that is important.	Alert Avatar Button Device File name Icon Log out Log in Menu My work area Notification Private Password Purple mash tools Saving Search	

Year 1 Unit 1.2 Grouping and Sorting	Computer science	Unit 1.1 Online Safety and PM • General use of Purple Mash • Systematic, logical thinking to solve problems and achieve aims • Use of 2Dos • Saving, opening and editing work • Sharing work	1. • Children can sort various items offline using a variety of criteria. 2. • Children have used Purple Mash activities to sort various items online using a variety of criteria.	Criteria Groups sort	
Year 1 Unit 1.3 Pictograms	Information technology	Unit 1.2 • Sorting data according to criteria	1. •Children can discuss and illustrate the transport used to travel to school. • Children can contribute to the collection of class data. • Children have used these illustrations to create a simple pictogram 2. • Children can contribute to a class pictogram. • Children can discuss what the pictogram shows. 3. • Children can collect data from rolling a die 20 times and recording the results. • Children can represent the results as a pictogram.	Collect data Compare Data Pictogram Record results Title	
Year 1 Unit 1.4 Lego Builders	Computer science	Unit 1.1 Online Safety and PM • General use of Purple Mash • Systematic, logical thinking to solve problems and achieve aims • Use of 2Dos • Saving, opening and editing work • Sharing work	1. • Children know that to achieve the effect they want when building something, they need to follow accurate instructions. • Children know that by following the instructions correctly, they will get the correct result. • Children know that an algorithm is a precise, step-by-step set of instructions used to solve a problem or achieve an objective. 2. • Children can follow instructions in a computer program. • Children can explain the effect of carrying out a task with no instructions. • Children know that computers need precise instructions to follow. • Children know that an algorithm written	Algorithm Code Computer Debugging Instructions Program	

			3. • Children understand how the order in which the steps of a recipe are presented affects the outcome. • Children can organise instructions for a simple recipe. • Children know that correcting errors in an algorithm or program is called 'debugging'.		
Year 1 Unit 1.5 Maze Explorers	Computer science	Unit 1.4 Lego Builders • Logical decision making • Sequencing instructions • Following instructions	1. • Children know how to use the direction keys in 2Go to move forwards, backwards, left and right. • Children know how to add a unit of measurement to the direction in 2Go Challenge 2. • Children know how to undo their last move. • Children know how to move their character back to the starting point. 2. Children can use diagonal direction keys to move the characters in the right direction. • Children know how to create a simple algorithm. • Children know how to debug their algorithm. 3. • Children can use the additional direction keys to create a new algorithm. • Children can challenge themselves by using the longer algorithm to complete challenges. 4. • Children can change the background images in their chosen challenge and save their new challenge. • Children have tried each other's challenges.	Algorithm Challenge Command Direction Instruction Left and right Route Undo Unit	
Year 1 Unit 1.6 Animated Stories	Information technology	Unit 1.1 Online Safety and PM • General use of Purple Mash • Design: avatar creation • Paint Projects: use of the simple paint tools	1. • Children know the difference between a traditional book and an e-book. • Children can use the different drawing tools to create a picture on the page. • Children can add text to a page. 2. • Children can open previously saved work. • Children can add an animation to a page. • Children can play the pages created.	Animation Background Clip-art gallery E-book Edit Font Sound Sound effect Text	

			• Children can save changes and overwrite the file. 3. • Children can add a sound to the page. • Children can add voice recording to the page. • Children can create music for a page. 4. • Children can add a background to the page. • Children can use the additional drawing tools on My Story mode. • Children can change the font style and size. 5. • Children can use the copy and paste function to add more pages to their animated e-book. • Children can share their e-books on a class story book display board.		
Year 1 Unit 1.7 Coding	Computer science	Unit 1.4 Lego Builders • Algorithms • Logical decision making • Sequencing instructions • Following instructions Unit 1.5 Maze Explorers • Coding a 'turtle' • Creating programs using sequencing and repeat. • Visual use of the Logo programming language. • Program logic and structure	1. • Children can give and follow instructions. • Children can draw symbols to represent instructions. • Children can arrange code blocks to create a set of instructions. 2. • Children can create a program using code blocks. • Children can use object and action code blocks. 3. • Children can create a simple program using code blocks. • Children can use event, object and action code blocks. 4. • Children can create a simple program using code blocks. • Children can use event, object and action code blocks. • Children can notice when their code executes when their program is run. 5. • Children can edit a scene by adding, deleting and moving objects.	Action Algorithm Background Code Command Debug/debugging Event Execute Input Instructions Object Output Properties Run Scale Scene Sound When clicked	

			• Children can change the size of objects using the attributes (properties) table. 6. • Children can create a design plan for their Free Code Scene program. • Children can use code to make the program they have designed work.		
Year 1 Unit 1.9 Tech Outside School	Digital literacy	Unit 1.1 Online Safety and PM • General use of Purple Mash	1. • Children understand what is meant by 'technology'. • Children have considered types of technology used in school and out of school. 2. • Children have recorded 4 examples of where technology is used away from school.	Computer Technology	

Yr group, Unit Title	Domain	Previous Learning	National Curriculum – Learning Questions	Tier 2 Vocabulary	Tier 3 Vocabulary
Year 2 Unit 2.2. Online Safety	Digital literacy	Unit 1.1 Online Safety and PM • Safe logins • Concept of privacy • Concept of ownership • The need to logout Unit 1.9 Technology outside school • Developing ideas about the concept of technology that we are surrounded by and its purpose	1. • Children can use the search facility to refine searches on Purple Mash by year group and subject. • Children can share the work they have created to a display board. • Children understand that the teacher approves work before it is displayed. • Children are beginning to understand how things can be shared electronically for others to see both on Purple Mash and the Internet. 2. • Children know that Email is a form of digital communication. • Children understand how 2Repond can teach them how to use email. • Children can open and send an email to a 2Respond character. • Children have discussed their own experiences and understanding of what email is used for. • Children have discussed what makes us feel happy and what makes us feel sad. 3. • Children can explain what a digital footprint is. • Children can give examples of things that they would not want to be in their digital footprint.	Attachment Digital footprint Email Filter Internet Personal information Private information Search Secure Sharing	
Year 2 Unit 2.5 Effective Searching	Digital literacy	Unit 1.1 Online Safety and PM • Safe logins • Using Purple Mash search functionality Unit 1.6 Technology Outside School • Developing ideas about the concept of technology that we are surrounded by and its purpose	1. • Children can recall the meaning of key Internet and searching terms. • Children have completed a quiz about the Internet. 2. • Children can identify the basic parts of a web search engine search page. • Children have learnt to read a web search results page. • Children can search the Internet for answers to a quiz.	Digital footprint Domain Internet Network Search engine Web address Web page World wide web	

		Unit 2.2 Online Safety • Sharing to a display board • Sharing online • Digital footprint	3. • Children have created a leaflet to consolidate knowledge of effective Internet searching.	Web site	
Year 2 Unit 2.1 Coding	Computer science	Unit 1.7 Coding • Introducing block coding • Objects and actions • Events (Click event, sound output) • Executing a program • Design view: Planning Unit 1.4 Lego Builders • Algorithms • Logical decision making • Sequencing instructions • Following instructions Unit 1.5 Maze Explorers • Coding a 'turtle' • Creating programs using sequencing and repeat • Visual use of the Logo programming language • Program logic and structure	1. • Children can explain that an algorithm is a set of instructions. • Children can describe the algorithms they created. • Children can explain that for the computer to make something happen, it needs to follow clear instructions. 2. • Children can plan an algorithm that includes collision detection. • Children can create a program using collision detection. • Children read blocks of code and predict what will happen when it is run. 3. • Children can create a program that uses a timer-after command. • Children can explain what the timer-after command does in their program. • Children can predict what will happen in a program that includes a timer-after command. 4. • Children can create a computer program that includes different object types. • Children can modify the attributes (properties) of an object. • Children can use different events in their program to make objects move. 5. • Children can create a computer program that includes a button object. • Children can explain what a button does in their program. • Children can modify the attributes (properties) of a button to fit their program design. 6. • Children can explain what debug (debugging) means.	Action Algorithm Background Bug Button Click events Collision detection Command Debug-debugging Collision detection Event Execute Implement Instructions Interaction Interval Object Output Properties Run	

			• Children can use a design document to start debugging a program. • Children can debug simple programs.		
Year 2 Unit 2.4 Questioning	Information technology	Unit 1.2 Grouping and Sorting • Sorting data according to criteria Unit 1.3 Pictograms • Collecting and presenting data in a picture format	1. • Children understand that the information on pictograms cannot be used to answer more complicated questions. 2. • Children have used a range of yes/no questions to separate different items. • Children understand what is meant by a binary tree. • Children have designed a binary tree to sort pictures of children. 3. • Children understand that questions are limited to 'yes' and 'no' in a binary tree. • Children understand that the user cannot use 2Question to find out answers to more complicated questions. • Children have matched 2Simple item pictures to names using a binary tree 4. • Children understand what is meant by a database. • Children have used a database to answer simple and more complex search questions.	Binary tree Data Database Field Pictogram Question Record Search Sort	
Year 2 Unit 2.6 Creating Pictures	Information technology	Unit 1.1. Online Safety and PM • General use of Purple Mash • Design: avatar creation • Paint Projects: use of the simple paint tools Unit 1.6 Animated Story Books • 2Create a Story: Painting tool. • Animating images using built in effects • Concept of background (static) and foreground (can move)	1. • Children can describe the main features of impressionist art. • Children can use 2Paint a Picture to create art based upon this style 2. • Children can explain what pointillism is. • Children can use 2Paint a Picture to create art based upon this style. 3. • Children can describe the main features of Piet Mondrian's work. • Children can use 2Paint a Picture to art based upon his style.	Art Fill Impressionism Palette Pointillism Style Surrealism	

			4. • Children can describe the main features of art that uses repeating patterns. • Children can use 2Paint a Picture to create art by repeating patterns in a variety of ways. • Children can combine more than one effect in 2Paint a Picture to enhance patterns. 5. • Children can describe surrealist art. • Children can use the eCollage function in 2Paint a Picture to create surrealist art using drawing and clipart.		
Year 2 Unit 2.3 Spreadsheets	Information technology	Unit 1.3 Pictograms • What is data? • Representing data	1. • Children can navigate around a spreadsheet. • Children can explain what rows and columns are. • Children can enter data into cells. 2. • Children can use the menu buttons to add different types of images. • Children can use the apparatus images to solve maths questions. • Children can use the 'move cell' tool so that images can be dragged around the spreadsheet 3. • Children can use the clipart gallery to add images to a spreadsheet. • Children can give images a value. • Children can make use of the values given to images in calculations. 4. • Children can use tools in a spreadsheet to automatically total rows and columns. • Children can use a spreadsheet to solve a mathematical puzzle 5. • Children can use the count tool to count items. • Children can use the speak tool so that the items are counted out loud	Calculations Cell Column Data Data table Drag Equals Spreadsheet Graph Row Equals tool Total	

			6. • Children can create a table of data on a spreadsheet. • Children can use a spreadsheet program to automatically create charts and graphs from data.		
Year 2 Unit 2.8 Presenting ideas	Information technology	Unit 1.6 Animated Story Books • Creating text and the use of illustrations • Genre: animated picture book Unit 2.6 Creating Pictures • Presenting ideas in art form • 2Paint a Picture: art effects, collage effects	1. • Children have examined a traditional tale presented as a mind map, as a quiz, as an e-book and as a fact file. • Children know that digital content can be represented in many forms. 2. • Children have made a quiz about a story using 2Quiz. • Children can talk about their work and make improvements to solutions based on feedback received. 3. • Children have extracted information from a 2Connect file to make a publisher fact file on a non-fiction topic. • Children have added appropriate clipart. • Children have added an appropriate photo. • Children know that data can be structured in tables to make it useful. 4. • Children can use a variety of software to manipulate and present digital content and information. • Children can collect, organise and present data and information in digital content. • Children can create digital content to achieve a given goal by combining software packages.	E-book Fact file Fiction Mind map Node Non-fiction Presentation Quiz	

Yr group, Unit Title	Domain	Previous Learning	National Curriculum – Learning Questions	Tier 2 Vocabulary	Tier 3 Vocabulary
Year 3 Unit 3.1 Coding	Computer science	**Unit 2.1 Coding** • Algorithms • Collision detection • Timers • Object types • Buttons • Debugging **Unit 2.4 Questioning** • Logical decision processing. • Forward planning to achieve a solution	**1.** • Children can read and explain a flowchart • Children can use a flowchart to create a computer program. • Children can create a computer program that uses click events and timers. **2.** • Children can create a program that uses a timer-after command • Children can create a program that uses a timer-every command • Children understand there can be different ways to solve a problem. **3.** • Children understand how the turtle object moves. • Children can use the repeat command with an object. • Children can create a computer program that includes use of the repeat command. **4.** • Children can create computer programs using prior knowledge. • Children can run, test and debug their programs. • Children can consider nesting when debugging their programs. **5/6.** • Children can use the attributes (properties) table to set the attributes of objects. • Children can plan their scene and code before they create their program. • Children can confidently make several different things happen in a program.	Action Alert Algorithm Background Bug Button Click event Code Collision detection event Command Debug Debugging Event Flowchart Implement Input Interval Nesting Object Predict Properties Repeat Run Scene Sequence Test Timer Turtle object	
Year 3 Unit 3.2 Online Safety	Digital literacy	Unit 2.2 Online Safety • Share to a displayboard • Approval process • Sharing online	1. • Children understand what makes a good password for use on the Internet. Children are beginning to realise the outcomes of not keeping passwords safe.	Appropriate Blog Inappropriate Internet	

		• Email simulations • emotional impact of communications • digital footprint Unit 2.5 Effective Searching • Search engine • Digital footprint • Privacy	• Children can contribute to a concept map of all the different ways they know that the Internet can help us to communicate. • Children have contributed to a class blog with clear and appropriate messages. • Extension: Children understand that passwords help to limit who can see personal / private / confidential information. 2. • Children understand that some information held on websites may not be accurate or true. • Children are beginning to understand how to search the Internet and how to think critically about the results that are returned. • Children have accessed and assessed a 'spoof' website. • Children have created their own 'spoof' webpage mock-up. • Children have shared their 'spoof' web page on a class display board. • Extension: Children evaluate facts from a website and explain how they fact checked the information that was presented. 3. • Children can identify some physical and emotional effects of playing/watching inappropriate content/games. • Children relate cyberbullying to bullying in the real-world and have strategies for dealing with online bullying including screenshot and reporting.	Password Personal information Permission Reputable source Reliable source Spoof Verify Vlog Website	
Year 3 Unit 3.3 Spreadsheets	Information technology	Unit 2.3 Spreadsheets • Copying and pasting • Totalling tools • Addition • Table layout • Block graph Unit 2.4 Questioning • Ways to represent data • Pictograms (2Count)	1. • Children can use the correct terminology for a spreadsheet program. • Children can create a table of data on a spreadsheet. • Children can use a spreadsheet program to automatically create charts and graphs from data. 2. • Children can describe a cell location in a spreadsheet using the notation of a letter for the column followed by a number for the row. • Children can find specified locations in a spreadsheet.	Advance mode Bar graph Budget Cell address Columns Data Data table Equals Equals tool Formula bar	

		• Binary trees (2Question) • Databases (2Investigate)	3. • Children can follow the steps of the formula wizard to perform calculations. • Children can enter formulae into the formulae bar. • Children can create formulae to complete calculations. 4. • Children can use the timer, random number and spin button tools. • Children can combine tools to make ways to explore number. 5. • Children can use a series of data in a spreadsheet to create a line graph. • Children can use a line graph to find out when the temperature in the playground will reach a certain temperature. 6. • Children can describe a group of cells using range notation. • Children can use a spreadsheet to plan a party budget. • Children can add multiple sheets to a spreadsheet file.	Formula wizard Line graph Pie chart Quiz tool Range Rows Spin tool	
Year 3 Unit 3.4 Touch Typing	Information technology	Unit 2.5 Effective Searching • Efficient use of a search engine • Leaflet creation Unit 2.8 Presenting Ideas • Presenting ideas in a variety of styles including through typed text	1. • Children understand the names of the fingers. • Children understand what is meant by the home, bottom, and top rows. • Children have developed the ability to touch type the home, bottom, and top rows. 2. • Children can use two hands to type the letters on the keyboard. 3. • Children can touch type using the left hand. 4. • Children can touch type using the right hand.	Posture Keys Space bar Typing	
Year 3 Unit 3.6	Information technology	Unit 2.3 Spreadsheets	1. • Children understand how YES/NO questions are structured and answered.	Binary tree	

Branching Databases		• Use of 2Calculate to collect data and produce a graph Unit 2.4 Questioning • Enquiry into different data handling tools • Use of questioning to separate and group data	• Children have used YES/NO questioning to play a simple game with a friend. • Children can explain why they choose a particular question to split their database. • Extension: Children can begin to use 'or more' and 'or less' in their questioning 2. • Children have contributed to a class branching database about fruit. • Children have completed a branching database about vegetables. • Extension: Children can edit and adapt a branching database to accommodate new entries. 3/4. •Children can choose a suitable topic for a branching database. • Children can select and save appropriate images. • Children can create a branching database. • Children know how to use and debug their own and others branching databases.	Branching databases Data Database Debugging	
Year 3 Unit 3.5 Email	Digital literacy	Unit 2,2 Online Safety • Sharing online • Email simulations • Emotional impact of communications • Digital footprint Unit 2.5 Effective Searching • Exploration of what the Internet is • Accessing the World Wide Web • Digital Footprint • Searching and sharing Unit 3.2 Online Safety • Good Passwords and password privacy • Communication methods	1. • Children can list a range of different ways to communicate. • Children can use 2Connect to highlight the strengths and weaknesses of each method. • Extension: Children can order the various types of communication that have been used through history. 2. • Children can open an email and respond to it. • Children have sent emails to other children in the class. • Extension: Children can use the search option in the address book to find a classmate when sending an email. 3. • Children have written rules about how to stay safe using email. • Children have contributed to classmates' rules. • Extension: Children understand the importance of draft.	Address book Attachment BCC CC Communication Compose Email Inbox Password Personal information Save to draft Trusted contact	

		• Cyberbullying and reporting problems	4. • Children have created a quiz about email safety which explores scenarios that they could come across in the future. • Extension: Children create title screens for their quizzes explaining what the quiz is about, and how to play it. 5. • Children can attach work to an email. • Children know what CC means and how to use it 6. • Children can read and respond to a series of email communications. • Children can attach files appropriately and use email communication to explore ideas. • Extension: Children know why the terms CC and BCC are used • Children understand when to use CC or BCC		
Year 3 Unit 3.9 Presenting (MS PowerPoint)	Information technology	Unit 2.6 Creating Pictures • Presenting ideas in art form • 2Paint a Picture: art effects, collage effects Unit 2.8 Presenting Ideas • Creating work for a variety of purposes and different genres • Presenting the same information in different styles: animated story, quiz based on a story, concept map of a story, writing template Unit 3.4 Touch Typing • Keyboard skills • Typing fluency	1. • Children know what PowerPoint is. • Children can open PowerPoint. • Children can add text to a page and format it. • Children can add shapes to a page. 2. • Children can change the design of the slides. • Children can insert a new slide. • Children can insert pictures. • Children can edit pictures. • Children can insert video and audio. 3. • Children can use animations in a presentation. • Children can use transitions in a presentation. 4. • Children can add timings to a presentation. • Children can present effectively using PowerPoint. 5/6. • Children can create a presentation including formatted text.	Animation Border properties Font formatting Layer Media Presentation Slide Slideshow Text box Transition WordArt	

			• Children can include different media. • Children can add transitions and animations. • Children can add timings to the presentation. • Children can present effectively.		
Year 3 Unit 3.10 Microbits	Computer science	Unit 3.1 Coding • Flow charts • Timers • Repeat • Code, test, debug process Unit 3.6 Branching databases • Logical decision processing • Modelling selection on a binary tree	1. Children can explain that the micro:bit is a tiny computer. • Children can give the micro:bit instructions in code to make a name badge using the LED display output. 2. • Children can create a micro:bit animation using a sequence of images in a loop. • Children can explain that the order or sequence of instructions is important. 3. Children can make the micro:bit show different pictures on the LED display output depending on which button input is pressed. • Children can explain that inputs are data sent to a computer. • Children can explain that outputs are data sent from a computer. 4. • Children can use the music editor to create sounds and music. • Children can explain that accelerometer is a sensor, an input that senses movement. • Children can create code that makes sounds play using different movement gestures.	Accelerometer Animation Data Gestures Hardware Image Infinite loop Input LED Output Program Repeat	

Yr group, Unit Title	Domain	Previous Learning	National Curriculum – Learning Questions	Tier 2 Vocabulary	Tier 3 Vocabulary
Year 4 Unit 4.1 Coding	Computer science	Unit 3.1 Coding • Flowcharts • Timers • Repeat • Code, test, debug process Unit 3.6 Branching Databases • Logical decision processing • Modelling selection on a binary model	1. • Children can explore different object types in 2Code. • Children can use a background and objects to create a scene. • Children can plan an algorithm for their scene and use 2Code to program it. 2. • Children can create a program that includes an IF statement. • Children can interpret a flowchart that depicts an IF statement. 3. • Children can make use of the X and Y attributes (properties) of objects in their coding. • Children can create a program that includes an IF statement. 4. • Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes an IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement. 5. • Children can explain what a variable is in programming. • Children can create and use variables when programming. 6. • Children can read code that includes repeat until and IF/ ELSE and explain how it works. • Children can create a program that includes and IF/ ELSE statement. • Children can interpret a flowchart that depicts an IF/ ELSE statement.	Action Alert Algorithm Background Button Code blocks Command Debug/ debugging Design Execute Event Flowchart 'If' statement 'If/else' statement Implement Input Nest Object Predict Prompt Properties Run Repeat Repeat until Selection Sequence Timer Variable	
Year 4 Unit 4.8	Computer science	Unit 3.5 Email	1. • Children can name the different parts of a desktop computer.	Components CPU	

Hardware Investigators		• Using device functions for 2-way communication via the World Wide Web All units • Children develop an understanding of the software capabilities of devices that they can then relate to the hardware components	• Children know what the function of the different parts of a computer is. 2. • Children have created a leaflet to show the function of computer parts.	Graphics card Hard drive Input Motherboard Network card Output Peripherals RAM Software	
Year 4 Unit 4.2 Online Safety	Digital literacy	Unit 3.2 Online Safety • Good Passwords and password privacy • Communication methods • Shared blog • Reliability of information and spoof websites • appropriate ratings • emotional effects • Cyberbullying • reporting problems Unit 3.5 Email • Evaluating communications • email safety • sharing images - safety • not meeting • attachments	1. • Children know that security symbols such as a padlock protect their identity online. • Children know the meaning of the term 'phishing' and are aware of the existence of scam websites. • Children can explain what a digital footprint is and how it relates to identity theft. • Children can give examples of things that they would not want to be in their digital footprint. 2. • Children can identify possible risks of installing free and paid for software. • Children know that malware is software that is specifically designed to disrupt, damage, or gain access to a computer. • Children know what a computer virus is 3. • Children can determine whether activities that they undertake online, infringe another's' copyright. They know the difference between researching and using information and copying it • Children know about citing sources that they have used. 4. • Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time.	AdFly Attachment Citation Collaborate Cookies Copyright Digital footprint Malware Phishing Plagiarism Ransomware SMART rules Spam Virus Watermark	

Year 4 Unit 4.7 Effective Searching	Information technology	Unit 3.2 Online Safety • Reliability of information and spoof websites • Appropriate ratings • Reporting problems Unit 4.2 Online Safety • Phishing • Digital footprint • Malware and viruses • Plagiarism	1. • Children can structure search queries to locate specific information. 2. • Children have used search to answer a series of questions. • Children have written search questions for a friend to solve. 3. • Children can analyse the contents of a web page for clues about the credibility of the information.	Balanced view Easter eggs Internet Key words Reliability Results page Search engine	
Year 4 Unit 4.6 Animation	Information technology	Unit 1.1 Online Safety and PM • General use of Purple Mash • Design: avatar creation • Paint Projects: use of the simple paint tools Unit 1.6 Animated Stories • 2Create a Story: Painting tool. • What animation is • Animating images using built in effects • Concept of background (static) and foreground (can move) Unit 2.6 Creating Pictures • 2Paint a Picture: art effects, collage effects	1. • Children have put together a simple animation using paper to create a flick book. • Children understand animation frames. • Children have made a simple animation using 2Animate. 2. • Children know what the Onion Skin tool does in animation. • Children can use the Onion Skin tool to create an animated image. • Children can use backgrounds and sounds to make more complex and imaginative animations. 3. • Children know what 'stop motion' animation is and how it is created. • Children have used ideas from existing 'stop motion' films to recreate their own animation. • Children have shared their animations and commented on each other's work using display boards and blogs in Purple Mash.	Animation FPS (frames per second) Frame Onion skinning Pause Stop motion	
Year 4 Unit 4.5 Logo	Computer science	Unit 3.1 Coding • Familiarity with a code environment • Logical planning of sequences • Debugging skills	1. • Children know what the common instructions are in 2Logo and how to type them. • Children can follow simple 2Logo instructions to create shapes on paper.	Debugging Grid LOGO LOGO commands (e.g	

		Unit 3.6 Branching Databases • Logical decision processing • Forward planning to achieve a solution Unit 4.1 Coding • Familiarity with code environment • Logical planning of sequences and repetition • Debugging skills	• Children can follow simple instructions to create shapes in 2Logo. 2. • Children can create 2Logo instructions to draw patterns of increasing complexity. • Children understand the pu and pd commands. • Children can write 2Logo instructions for a word of four letters. 3. • Children can follow 2Logo code to predict the outcome. • Children can create shapes using the Repeat command. • Children can find the most efficient way to draw shapes 4. • Children can use the Procedure feature. • Children can create 'flowers' or 'crystals' using 2Logo.	FD, BK, RT, LT) Multi line mode Pen down Pen up Prediction Procedure Repeat Run speed SETPC SETPS	
Year 4 Unit 4.10 Introduction to AI	Information technology	Unit 1.9 Technology outside school • To look for places where technology is used in and out of school.	1. • Children can define artificial intelligence in their own words. • Children can identify at least three examples of artificial intelligence 2. • Children can define artificial intelligence. • Children can understand where AI can help us in our daily lives. 3. • Children can use critical thinking and creativity in envisioning the future of AI. • Children can express their ideas about the future of AI. • Children can collaborate effectively. 4. • Children can try to distinguish between creative compositions made by humans and those made using artificial intelligence. • Children can use artificial intelligence to create images and music.	Algorithm Artificial intelligence Data	

Year 4 Unit 4.11 Microbits	Computer science	Unit 4.1 Coding • Code, test, debug process • IF statements • Repeat Until and IF/ ELSE Statements • Number Variables Unit 4.5 Logo • Text-based coding • Utilize understanding of coding structures Unit 4.6 Animation • Sequencing and animation in logical steps	1. • Children can turn a micro:bit into a step counter using the accelerometer and variables. • Children can explain that accelerometer is a sensor, an input that senses movement. • Children can explain that variables are containers for storing data which can be accessed and updated. 2. • Children can code a micro:bit to make a light that switches on when it gets dark using sensors and logic. • Children can explain that sensors are inputs that sense things in the real world, such as movement and light. • Children can explain that logic is how computers make decisions in code based on whether things are true or false. 3. • Children can code a micro:bit rock, paper, scissors game using inputs, random numbers, variables and logic. • Children can explain how combining inputs, random numbers, variables, and logic can make a computer simulation of a real-world game. 4. • Children can code a micro:bit dice using inputs, random numbers, variables and logic. • Children can explain how combining inputs, random numbers, variables, and logic can make a computer simulation of a real dice.	Accelerometer Data Gestures Infinite loop Light sensor Logic Selection Sensor Simulation Variable	

Yr group, Unit Title	Domain	Previous Learning	National Curriculum – Learning Questions	Tier 2 Vocabulary	Tier 3 Vocabulary
Year 5 Unit 5.2 Online Safety	**Digital literacy**	**Unit 4.2 Online Safety** • Phishing • Digital footprint • Malware and viruses • Plagiarism • Screen time **Unit 4.7 Effective Searching** • Reliable sources • Search algorithms - impact on what you see	1. • Children critically about the information that they share online both about themself and others. • Children know who to tell if they are upset by something that happens online. • Children can use the SMART rules as a source of guidance when online. 2. • Children think critically about what they share online, even when asked by a usually reliable person to share something. • Children have clear ideas about good passwords. • Children can see how they can use images and digital technology to create effects not possible without technology. • Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools and little specialist knowledge. 3. • Children can cite all sources when researching and explain the importance of this. • Children select keywords and search techniques to find relevant information and increase reliability. 4. • Children show an understanding of the advantages and disadvantages of different forms of communication and when it is appropriate to use each.	Citation Collaborate Communication Copyright Creative Commons Licence Encrypt Identity theft Malware Ownership Phishing Spoof Personal information PEGI ratings Password SMART rules Reliable source Validity	Year 5 Unit 5.2 Online Safety
Year 5 Unit 5.1 Coding	Computer science	Unit 4.1 Coding • Code, test, debug process • IF statements • Repeat Until and IF/ ELSE Statements • Number Variables Unit 4.5 Logo • Text-based coding	1. • Children can use simplified code to make their programming more efficient. • Children can use variables in their code. • Children can create a simple playable game. 2. • Children can plan an algorithm modelling the sequence of traffic lights.	Abstraction Action Algorithm Concatenation Debug Debugging Decomposition Efficient	

		• Utilize understanding of coding structures Unit 4.6 Animation • Sequencing and animation in logical steps	• Children can select the right images to reflect the simulation they are making. • Children can use their plan to program the simulation to work in 2Code. 3. • Children can make good attempts to break down their task into smaller achievable steps. • Children recognise the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task. 4. • Children can create a program which represents a physical system. • Children can create and use functions in their code to make their programming more efficient. 5. • Children can create and use strings in programming. • Children can set/change variable values appropriately. • Children know some ways that text variables can be used in coding 6. • Children can create a string and use it in their program. • Children can use strings to produce a range of outputs in their program.	Flowchart Event Function Input Nesting Object Output Physical system Properties Repeat Sequence Selection Simplify Timer Variable	
Year 5 Unit 5.3 Spreadsheets	Information technology	**Unit 3. 3 Spreadsheets** • Formula wizard • Cell formatting • Timer, random number and spin buttons • Budget planner sheet • Line graphs	1. • Children can create a formula in a spreadsheet to convert metric measurements of length and distance. • Children can apply this to creating a spreadsheet that converts between metric and imperial measures. • (Optional) Children can use a spreadsheet to set the number of decimal places displayed. 2. • To use a spreadsheet to model a real-life problem. • To use formulae to calculate area and perimeter of shapes.	Budget Columns Computational model Count tool Data Dice tool Expenses Format Formula	

			3. • Children can create a spreadsheet to answer a mathematical question relating to probability. • Children can problem solve using the count tool 4 and 5. • Children can use spreadsheets to model real-life situations and produce solutions that can be practically applied. 6. • Children can use a spreadsheet to work out which letters appear most often. • Children can use the count tool.	Formula bar Hypothesis Profit Totalling tool Rows	
Year 5 Unit 5.4 Databases	Information technology	Units 1.9, 2.1, 3.1, 4.1 and 5.1 Coding • Logical thinking and debugging	1. • Children understand the different ways to search a database. • Children can search a database to answer questions correctly. 2. • Children can design an avatar for a class database. • Children can successfully enter information into a class database. 3/4. • Children can create their own database on a chosen topic. • Children can add records to their database. • Children know what a database field is and can correctly add field information. • Children understand how to word questions so that they can be effectively answered using a search of their database.	Avatar Arrange Chart Collaborative Data Database Field Group Record Database report Search Sort Statistics	
Year 5 Unit 5.5 Game Creator	**Computer science**	**Unit 4.6 Animation** • Create a stop motion animation using 2Animate • Use of sounds, backgrounds and effects **Units 2.1, 3.1, 4.1 and 5.1 Coding**	1. • Children can review and analyse a computer game. • Children can describe some of the elements that make a successful game. • Children can begin the process of designing their own game.	Animation Image Texture Computer game Instructions Perspective	

		• Sequencing programs to created different themed environments	2. • Children can design the setting for their game so that it fits with the selected theme. • Children can upload images or use the drawing tools to create the walls, floor, and roof. 3. • Children can design characters for their game. • Children can decide upon, and change, the animations and sounds that the characters make. 4. • Children can make their game more unique by selecting the appropriate options to maximise the playability. • Children can write informative instructions for their game so that other people can play it. 5. • Children can evaluate my their own and peers' games to help improve their design for the future.	Customise Interactive Playability Screenshot Evaluation	
Year 5 Unit 5.8 Word Processing (MS Word)	Information technology	Unit 4.7 Effective Searching • Efficient structure of search queries • Answering written questions	1. • Children know what a word processing tool is for. • Children will be able to create a word processing document altering the look of the text and navigating around the document. 2. • Children know how to add images to a word document. • Children can edit images to reduce their file size. • Children know the correct way to search for images that they are permitted to reuse. • Children know how to attribute the original artist of an image. 3. • Children can edit their images within Word to best present them alongside text. • Children understand wrapping of images and text. 4. • Children can add appropriate text to their document, formatting in a suitable way. • Children can use a style set in Word.	Bulleted lists Caps lock Captions Copy and paste Copyright Creative commons Cursor Document Font Hyperlink Merge cells Page orientation Formatting Text wrapping Readability Word art	

			• Children can use bullet points and numbering. 5. • Children can add text boxes and shapes. • Children can consider paragraph formatting such as line spacing, drop capitals. • Children can add hyperlinks to an external website. • Children can add an automated contents page. 6. • Children can add tables to present information. • Children can edit properties of tables including borders, colours, merging cells, adding and removing rows and columns. • Children can add word art for a heading. 7. • Children can use a Word template and edit it appropriately. 8. • Children can format a page using a combination of images, headers and columns.	Word processing tool	
Year 5 Unit 5.10 Mircrobits	Computer science	**Unit 5.1 Coding** • Efficient Coding • Simulating a Physical System • Decomposition and Abstraction • Friction and Functions • Introducing Strings • Text Variables and Concatenation	1. • Children can code a story telling game using a 'when gesture' event, random numbers, variables and logic IF/THEN commands. • Children can explain how a computer uses IF/THEN logic statements to select which image to display. 2. • Children can program a micro:bit to display the temperature measured by the sensor. • Children can explain that sensors are inputs that sense things in the real world, such as movement, temperature and light. • Children can program IF/THEN statements to introduce selection in their code to make things happen based on changing temperature. 3. • Children can program the 'when gesture: faceup' command to start the code running.	Accelerometer Crocodile clip Data Gestures IF/THEN Input LED Logic Output Pins Selection Sensor Simulation Variable	

			• Children can code a micro:bit Magic 8 Ball using gesture inputs, random numbers, variables and logic. • Children can explain that variables are named areas in device memory and are used in programming to keep track of data. 4. • Children can program a simulation of a football match using a 'when pin' event command, variables and text output commands to update and display goals scored. • Children can explain that variables are named areas in device memory and are used in programming to keep track of data. The data can be accessed and updated.		

Yr group, Unit Title	Domain	Previous Learning	National Curriculum – Learning Questions	Tier 2 Vocabulary	Tier 3 Vocabulary
Year 6 Unit 6.2 Online Safety	Digital literacy	Unit 5.2 Online Safety • Responsibility to others when sharing • Sources of support • SMART rules • Sharing passwords • Image manipulation • Citing sources • Searching • Reliability Unit 5.8 Word Processing • Use of images • Plagiarism • Citing sources	1. • Children have used the example game and further research to refresh their memories about risks online including sharing location, secure websites, spoof websites, phishing, and other email scams. • Children have used the example game and further research to refresh their memories about the steps they can take to protect themselves including protecting their digital footprint, where to go for help, smart rules and security software. 2. • Children understand how what they share impacts upon themselves and upon others in the long-term. • Children know about the consequences of promoting inappropriate content online and how to put a stop to such behaviour when they experience it or witness it as a bystander. • Extension: Children' actions demonstrate that they also feel a responsibility to others when communicating and sharing content online. 3. • Children can take more informed ownership of the way that they choose to use their free time. They recognise a need to find a balance between being active and digital activities. • Children can give reasons for limiting screen time. • Children can talk about the positives and negative aspects of technology and balance these opposing views. • Extension: Children have an internalised in-depth understanding of the risks and benefits of an online presence.	Data analysis Digital footprint Inappropriate Location sharing Password PEGI rating Phishing Print screen Screen time Secure websites Spoof	
Year 6 Unit 6.1 Coding	Computer science	**Unit 5.1 Coding** • Efficient Coding • Simulating a Physical System • Decomposition and Abstraction	1/2. • Children can plan a program which includes a timer and a score. • Children can follow their plans to create a program. • Children can debug when things do not run as expected.	Action Algorithm Command Co-ordinates	

		• Friction and Functions • Introducing Strings • Text Variables and Concatenation	3. • Children can create a program that makes use of functions. • Children can create a program that uses multiple functions with the code arranged in tabs. • Children can explain how their code executes when their program is run. 4. • Children can follow flowcharts to create and debug code. • Children can create flowcharts for procedures. • Children can be creative with the way they code to generate novel visual effects. 5. • Children can code programs that take text input from the user and use this in the program. • Children can attribute variables to user input. • Children are aware of the need to code for all possibilities when using user input. 6. • Children can follow through the code of how a text adventure can be programmed in 2Code. • Children can design their own text-based adventure game based on one they have played. • Children can adapt an existing text adventure so it reflects their own ideas.	Execute/run Event Decomposition Debug Debugging Flowchart Function Input Launch command Object Output Procedure Properties Predict Repeat Repeat until Sequence Selection Simulation Tab Timer Variable	
Year 6 Unit 6.5 Text Adventures	Computer science	Unit 5.1 Coding • Familiarity with the functionality of 2Code • Planning and designing for a logical outcome Unit 5.5. Game Creator • Game Design planning • Refining and reviewing games Unit 6.1 Coding	1. • Children can describe what a text adventure is. • Children can map out a story-based text adventure. • Children can use 2Connect to record their ideas. • Extension: Children can turn a simple story with 2 or 3 levels of decision making into a logical design 2. • Children can use the full functionality of 2Create a Story Adventure mode to create, test and debug using their plan. • Children can split their adventure game design into appropriate sections to facilitate creating it.	Text based adventures Debug Debugging Sprite Selection Function	

		• Familiarity with the functionality of 2Code • Planning and designing for a logical outcome. • Debugging	3. • Children can map out an existing text adventure. • Children can contrast a map-based game with a sequential story-based game. • Extension: Children can make a comprehensive design map with a sequence of rooms including rooms in which the player needs to make a choice and collect items in a certain order to complete the game. 4. • Children can create their own textbased adventure based upon a map. • Children can use coding concepts of functions, two-way selection (if/else statements) and repetition in conjunction with one another to code their game. • Children make logical attempts to debug their code when it does not work correctly.		
Year 6 Unit 6.4 Blogging	Information technology	Unit 5.2 Online Safety • Responsibility to others when sharing • Sources of support • SMART rules • Sharing passwords • Image manipulation • Citing sources • Searching • Reliability Unit 5.8 Word Processing • Use of images • Plagiarism • Citing sources Unit 6.2 Online Safety • Responsibility to others when sharing • Sources of support • Screen time • Being a bystander	1. • Children understand how a blog can be used as an informative text. • Children understand the key features of a blog. 2. • Children can work collaboratively to plan a blog. 3. • Children can create a blog or blog post with a specific purpose. • Children understand that the way in which information is presented has an impact upon the audience. 4. • Children can post comments and blog posts to an existing class blog. • Children understand the approval process that their posts go through and demonstrate an awareness of the issues surrounding inappropriate posts and cyberbullying. • Children can assess the effectiveness and impact of a blog. • Children understand that content included in their blog carefully considers the end user.	Approval Archive Blog Blog post Collaborate Commenting Vlog	

Year 6 Unit 6.6 Networks	Computer science	Unit 4.7 Effective Searching • Understanding of the 2- way communication technologies using algorithms that run of the hardware connections Unit 4.8 Hardware Investigator • Understanding of the hardware components that make devices function including those for networking Unit 6.4 Blogging • Using device functions for 2-way communication via the World Wide Web All online safety units • Understanding of the connections and communications between devices and device capabilities	1. • Children know the difference between the World Wide Web and the internet. • Extension: Children can provide examples of the difference between the World Wide Web and the Internet. 2. • Children know about their school network. • Extension: Children can explain the differences between more than two network types such as: LAN, WAN, WLAN and SAN. 3. • Children have researched and found out about Tim Berners-Lee. • Children have considered some of the major changes in technology which have taken place during their lifetime and the lifetime of their teacher/another adult.	Hub/switch Network Wide area network (WAN) Internet World wide web Local area network (LAN) Router Wi-Fi	
Year 6 Unit 6.8 Binary	Computer science	Unit 6.1 Coding • Complex programs • Using Functions • Flowcharts and Control Simulations • User Input:	1. • Children can explain how all data in a computer is saved in the computer memory in a binary format. • Children can explain that binary uses only the integers 0 and 1. • Children can relate 0 to an 'off' switch and 1 to and 'on' switch. 2. • Children can count up from 0 in binary using visual aids if needed. • Children can relate bits to computer storage. 3. • Children can convert numbers to binary using the division by two method. • Children can check their own answers using the converter tool.	Base 2 Bit Base 10 Digit Integer Switch Transistor Words used to describe numbers of bits and the computer memory space used: Nibble - 4 bits Byte -	

			4. • Children can make use of a variable set to 0 or 1 to control game states.	8 bits. Kilobyte (KB) - 1024 bytes Megabyte (MB) - 1024 KB Gigabyte (GB) - 1024 MB Tetrabyte (TB) - 1024 GB Machine code Variable	
Year 6 Unit 6.9 Spreadsheets (MS Excel)	Information technology	Unit 5.3 spreadsheets • Converting measures • Count tool • Formulae • Variables in formulae • Event planning Uniit 5.4 databases • Data representation in 2Investigate • Creating and interrogating data • Use of filter, sort and search Unit 5.8 word processing • Familiarity with look and feel of MS or Google tools. • Transfer skills to MS or Google functionality	1. • Children know some uses of a spreadsheet tool. • Children can navigate around a spreadsheet using cell references. • Children can enter data into cells. • Children understand new vocabulary relating to spreadsheets: cells, columns, rows, cell names, sheets, and workbook. 2. • Children can use a spreadsheet to carry out basic calculations including addition, subtraction, multiplication and division formulae. • Children can use the series fill function. • Children recognise how using formulae allows the data to change and the calculations to update automatically. 3. • Children can use a spreadsheet to model a situation. • Children can use a spreadsheet to solve a problem. • Children can use the SUM function 4. • Children can use a variety of methods including flash fill, convert text to tables and splitting cells for organising and presenting their data in a spreadsheet. • Children know what is meant by a delimiter. • Children understand how to sort data.	Auto fit Cell Cell reference Chart Column Computational model Conditional formatting Data Delimiter Formula€ Formula bar Graph Horizontal axis Range Row Spreadsheet Vertica; axis Text wrapping	

			5. • Children know how to incorporate formulae for percentages, averages, max and min into their spreadsheets. • Children gain familiarity with range notation. • Children know some shortcuts that help to make data meaningful. • Children begin to develop a critical eye when it comes to the conclusions that can be made from data. 6. • Children know that there are ways to represent their data graphically and that spreadsheets can make the process of representing data easier • Children gain an understanding of how a graphical representation can make data easier to interpret. • Children make a variety of charts using Sheets. • Children illustrate their data using sparklines and data bars 7. • Children can understand how a spreadsheet can be used to plan an event. • Children understand the advantages of using formulae when data is subject to change. • Children have modelled a real-life situation using a spreadsheet. 8. • Children can understand how a spreadsheet can be used to plan an event. • Children understand the advantages of using formulae when data is subject to change. • Children have modelled a real-life situation using a spreadsheet.		

Computing Progression Map – Progress measures for working at the 'Expected' Level

KS1	Reception	Year 1	Year 2	KS2	Year 3	Year 4	Year 5	Year 6
Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions		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 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 so that they can be successfully converted into code.	Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs.	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 to 'step through' more complex code in order to identify errors in algorithms and can correct this. e.g., they can 'read' programs with several steps and predict the outcome accurately.	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.	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 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
Create and debug simple programs.		Children can work out what is wrong with a simple algorithm when the steps are out of order, e.g. The	Children can create a simple program that achieves a specific purpose. They can also	Design, write and debug programs that accomplish specific goals, including	Children can turn a simple real-life situation into an algorithm for a program by deconstructing it	When turning a real-life situation into an algorithm, the children's design shows that they are thinking	Children may attempt to turn more complex reallife situations into algorithms for a program by	Children are able to turn a more complex programming task into an algorithm by identifying

		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 code, e.g. Bubbles activity in 2Code	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.	controlling or simulating physical systems; solve problems by decomposing them into smaller parts	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	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.	deconstructing it into manageable parts. Children are able to test and debug 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.	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.
Use logical reasoning to predict the behaviour of simple programs.		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	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	Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	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'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	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	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 set task in code utilising such structures,

		challenges will end up at the end of the program.			Children are beginning to understand the difference in the effect of using a timer command rather than a repeat command when creating repetition effects.	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	utilising such structures. They are combining sequence, selection and repetition with other coding structures to achieve their algorithm design	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
Use technology purposefully to create, organise, store, manipulate and retrieve digital content.		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	Children demonstrate an ability to organise data using, for example, a database such as 2Investigate and can retrieve specific data for conducting simple searches. Children are able to edit more complex digital data such as music compositions within 2Sequence. Children are confident when	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,	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	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	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	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 improvements,

		using pictogram software such as 2Count.	creating, naming, saving and retrieving content. Children use a range of media in their digital content including photos, text and sound	evaluating and presenting data and information.	to emails, e.g. 2Respond.	community, i.e. using Virtual Display Boards.	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.	making some refinements
				Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	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 understand the function, features and layout of a search engine. They can appraise selected webpages for credibility and information at a basic level	Children search with greater complexity for digital content when using a search engine. They are able to explain in some detail how credible a webpage is and the information it contains	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
Recognise common uses of information technology beyond school.		Children understand what is meant by technology and can identify a variety of	Children can effectively retrieve relevant, purposeful digital content using a search engine.	Understand computer networks, including the internet; how they can	Children can list a range of ways that the Internet can be used to provide different methods of	Children recognise the main component parts of hardware which allow computers to join	Children understand the value of computer networks but are also aware of the main dangers.	Children understand and can explain in some depth the difference between the

		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.	They can apply their learning of effective searching beyond the classroom. They can 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.	provide multiple services, such as the World Wide Web, and the opportunities they offer for communication and collaboration.	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.	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.	They recognise what personal 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.	internet and the World Wide Web. Children know what a WAN and LAN are and can describe how they access the Internet in 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.		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 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	Use technology safely, respectfully and responsibly; recognise acceptable/ unacceptable behaviour; identify a range of ways to report concern about content and contact.	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	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	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 services. Children implicitly relate appropriate online behaviour to their right to personal privacy and mental wellbeing of themselves and others	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

			content to a trusted adult.		communication tools such as 2Email in Purple Mash. They know more than one way to report unacceptable content and contact.			own and other people's safety.
	Computer science							
	Information Technology							
	Digital Literacy							