Computing Overview and Progression Grid

Communicators	Explorers	Readers	Believers
Children will communicate ideas both verbally and electronically.	Children will use the internet to research and explore the wider world.	Children will have the opportunity to read sets of instructions / algorithms which will help the complete programming tasks.	Use software to become successful programmers this will help them to think logically and to work systematically and accurately.

EYFS	Topics to be covered over the year: Trackpad, Drawing Skills, Robots, Photography (Purple Mash EYFS Units)
Vocabulary	Laptop, ipad, app, photography, paint, programme, cursor, trackpad

Throughout Reception children will be exposed to Computing knowledge and skills	**By the end of Reception children will be able to:**
Ipads / tablets to practise key skills using different apps Take photographs of their work and their peers Use beebots for position and direction and begin programming them Use laptops through group work Be reminded of keeping safe on devices Develop track pad skills for using a mouse Use technology within their role play	Use a track pad to move the cursor on a laptop Programme a beebot to move forward and backwards Draw a recognisable picture using a laptop or ipad

FOCUS FIVE	I can find a given app on an Ipad	I can type my name on a keyboard	I can turn a laptop on and off	I can programme a Beebot to follow my instructions	I can give an instruction for someone else to follow

Year 1	Topics to be covered over the year: Online Safety, Exploring Purple Mash, Grouping and Sorting, Pictograms, Lego Builders, Maze Explorers, Coding , Animated Story Books, Technology outside of school
Vocabulary	Avatar, Filename device login logout password icon search saving criteria group sort pictogram data algorithm code debugging program command unit undo root animation clip art font text edit e-book command execute event output properties column row cell value spreadsheet

Computer Science	Information Technology	Digital Literacy
I can explain that an algorithm is a set of instructions.	I can sort sound, pictures and text.	I can say what technology is.
I know that a computer program turns an algorithm into code that the computer can understand.	I can add sound, pictures and text to a program such as 2Create a Story.	I can say what examples of technology are in school.
I can work out what is wrong when the steps are out of order in instructions.	I can change content on a file such as text, sound and images.	I can say what examples of technology are at home.
I can say that if something does not work how it should it is because my code is incorrect.	I can name my work.	I know that a chair uses old technology and a smart phone uses new technology.
I can try and fix my code if it isn't working properly.	I can save my work.	I can keep my login information safe.
I can make good guesses of what is going to happen in a program. For example, where the turtle might go.	I can find my work.	I can save my work in a safe place such as 'My Work' folder.

FOCUS FIVE					
	I can log into a laptop and my Purple Mash account	I can find the application I need on Purple Mash	I recognise all the letters on the keyboard and space, enter and delete	I can log out of Purple Mash and my laptop	I can give a set of instructions that the computer can follow (e.g. 2GO)

Year 2	**Topics to be covered over the year:** Coding, Online Safety, Spreadsheets, Questioning, Effective Searching, Creating Pictures, Making Music, Presenting Ideas
Vocabulary	Action, bug, collision detection, implement, interaction, interval, object, filter, digital footprint, personal information, secure, sharing, private information, attachment, label, total, drag, block graph, binary, tree, data, database, field, record, sort, domain, World Wide Web, web page, network, web address, fill, soundtrack, node, mind map

Computer Science	Information Technology	Digital Literacy
I can explain an algorithm is a set of instructions to complete a task.	I can organise data – for example, using a database such as 2Investigate.	I can find information I need using a search engine.
I know I need to carefully plan my algorithm so it will work when I make it into code.	I can find data using specific searches – for example, using 2Investigate.	I know the consequences of not searching online safely.
I can design a simple program using 2Code that achieves a purpose.	I can use several programs to organise information – for example, using binary trees such as 2Question or spreadsheets such as 2Calculate.	I can share work and communicate electronically – for example using 2Email or the display boards.
I can find and correct some errors in my program.	I can edit digital data such as data in music composition software like 2Sequence.	I can report unkind behaviour and things that upset me online, to a trusted adult.
I can say what will happen in a program	I can name, save and find my work.	I can see where technology is used at school such as in the office or canteen.
I can spot something in a program that has an action or effect (does something).	I can include photos, text and sound in my creations.	I understand that my creations such as programs in 2Code, need similar skills to the adult world. e.g. The program used for collecting money for school trips.

FOCUS FIVE					
	I can open and save a document in Purple Mash	I can make a simple search on a common search engine (Google/Safari)	I can use different effects in 2Paint	I can create a block graph from a spreadsheet	I can add a clip art in on Purple Mash

Year 3	**Topics to be covered over the year:** Coding , Online safety , Spreadsheets , Touch Typing , Email (including email safety) , Branching Databases , Simulations , Graphing
Vocabulary	flow chart, implement, input, nesting, repeat, scene, sequence, test, turtle object, blog, inappropriate, reputable source, permission, space, verify, reliable source, flog, bar graph, cell address, more than, less than, posture, keys, space bar, BCC, CC, inbox, save to draft, trusted contact, analysis, simulation, modelling, axis, tally chart, border, media, layer, slide, slideshow, text box, word art, transition

Computer Science	Information Technology	Digital Literacy
I can make a real-life situation into an algorithm for a program.	I can carry out searches to find digital content on a range of online systems, such as within Purple Mash or on an internet search engine.	I can create a secure password.
I can design an algorithm carefully, thinking about what I want it to do and how I can turn it into code.	I can collect data and input it into software.	I can explain the importance of having a secure password and not sharing it with others.
I can identify an error in my program and fix it.	I can analyse data using features within software to help such as, formula in 2Calculate	I can explain the negative consequences of not keeping passwords safe and secure.
I can experiment with timers in my programs.	I can present data and information using different software such as 2Question (branching database) or 2Graph (graphing tool).	I understand the importance of keeping safe online and behaving respectfully.
I can identify the difference in using between the effect of a timer or repeat command in my code.	I can consider what the most appropriate software to use when given a task by my teacher.	I can use communication tools such as 2Email respectfully and use good etiquette.
I know that a variable stores information while a program is running (executing).	I can create purposeful (appropriate) content and attach this to emails.	I can report unacceptable content and contact online in more than one way to a trusted adult.
I can identify 'If' statements, repetition and variables.		
I can read programs with several steps and predict what it will do		
I can identify different ways that the internet can be used for communication.		
I can use email such as 2Email to respond to others appropriately and attach files.		

FOCUS FIVE	I can open, save and print a Microsoft Word document	I can use a search engine effectively to find accurate information	I can tell you three ways to keep safe online	I know how to use the repeat command in 2code	I can send an email on 2email

Year 4	**Topics to be covered over the year:** Coding, Online safety, Spreadsheets, Writing for different audiences, Logo Weeks, Animation Effective Search, Hardware Investigators
Vocabulary	Action, alert, code blocks, design, flowcharts, if statement, if else statement, prompt, repeat until, run, variable, timer, cookies, citation, copyright, phishing, malware, plagiarism, ransomware, adfly, virus, spam, watermark, formula, average, budget, formula wizard, format cell, line graph, grid, logo commands, pen down, pen up, multiline mode, procedure, onion skinning, stop motion, frame, FPS, components, CPU, graphics card, hard drive, motherboard, network card, output, peripherals, ram, software, synth, BPM,

Computer Science	Information Technology	Digital Literacy
I can turn a real-life situation to solve into an algorithm, using a design that shows how I can accomplish this in code.	I understand the purpose of a search engine and the main features within it.	I have a good understanding of the online safety rules we learn at school.
I can use repetition in my code. For example, using a loop that continues until a condition is met such as the correct answer being entered.	I can look at information on a webpage and make predictions about the accuracy of information contained within it.	I can demonstrate how to use different online technologies safely.
I can use timers within my program designs more accurately to create repetition effects. For example, I can create a counting machine.	I can create and improve my solutions to a problem based on feedback. For example, create a program using 2Code.	I can demonstrate how to use a few different online services safely.
I can use selection (decision) in my programming. For example, using an 'if statement' for a question being asked and the program takes one of two paths.	I can review solutions that others have created, using a checklist of criteria.	I know I have a right to privacy both on and offline.
I can use the user inputs and output features within my program, such as 'Print to screen'.	I can work collaboratively to create content and solutions.	I recognise that my wellbeing can be affected by how I use technology.
I can use variables within my program and know how to change the value of variables.	I can share digital content using a variety of applications such as: 2Blog, 2Email and Display Boards.	I can report with ease any concerns with content and contact online and know immediate strategies to keep safe.
I can identify errors in my code by using different methods, such as steeping through lines of code and fixing them.		
I can read programs that contain several steps and predict the outcomes with increasing accuracy.		
I recognise the main component parts of hardware which allow computers to join and form a network.		
I understand that network and communication components can be found in many different devices which allow them to join the internet		

FOCUS FIVE	I can tell you two ways to prevent identity theft	I can use an 'IF' statement on 2code	I can add clip art in to a Word document	I can see where a simple algorithm is incorrect	I can add slides, transitions, text and images to a presentation

Year 5	**Topics to be covered over the year:** Coding, Online safety, Spreadsheets, Databases, Game Creator Weeks, 3D Modelling Weeks, Concept Maps
Vocabulary	Decomposition, called, abstraction, coordinates, function, tab, score, physical system, encryption, identity theft, shared image, reference, bibliography, move cell tool, customize, playability, screenshot, perspective, texture, interactive, CAD, 3D printing, template, net, Polygon, audience, visual, concept map, connection, merge cells, text formatting, text wrapping, cursor, readability, template, word art

Computer Science	Information Technology	Digital Literacy
I can make more complex real-life problems into algorithms for a program.	I can search precisely when using a search engine. For example, I know I can add additional words or removes words to help find better results. (5.2) (5.2 (Across units (Across units) (Across units)	I have a secure knowledge of online safety rules taught at school.
I can test and debug my programs as I work.	I can explain in detail how accurate, safe and reliable the content is on a webpage.	I can demonstrate the safe and respectful use of different online technologies and online services.
I can convert (translate) algorithms that contain sequence, selection and repetition into code that works.	I can make appropriate improvements to digital work I have created.	I always relate appropriate online behaviour to my right to have personal privacy.
I can use sequence, selection, repetition, and some other coding structures in my code.	I can comment on how successful a digital solution is that I have created. For example, a program built in 2Code that sorts decimals numbers.	I know how to not let my mental wellbeing or others be affected by use of online technologies and services.
I can organise my code carefully for example, naming variables and using tabs. I know this will help me debug more efficiently.	I can work collaboratively with others creating solutions to problems using appropriate software such as 2Code.	
I can use logical methods to identify the cause of any bug with support to identify the specific line of code.	I can use collaborative modes such as within 2Connect to work with others and share it.	
I know the importance of computer networks and how they help solve problems and enhance communication.		
I recognise the main dangers that can be perpetuated via computer networks		
I can use the most appropriate form of online communication according to the digital content. For example, use 2Email, 2Blog and Display Boards.		

FOCUS FIVE					
	I can set and change variables in 2code	I can open, create and save a simple Microsoft PowerPoint	I know what information I shouldn't share online	I can create a MS Word document with a table, text box and hyperlinks	I can add information into a database

Year 6	**Topics to be covered over the year:** Coding , Online safety, Spreadsheets, Blogging, Text Adventures, Networks, Quizzing

Vocabulary	Launch command, simulation, PEGI rating, locations sharing, screen time, print screen, secure website, profit, probability, blog, approval, commenting, archive, blog post, hub/ switch, Internet, LAN, WAN, router, Wi-Fi, clone, case-sensitive,

Computer Science	Information Technology	Digital Literacy
I can turn a complex programming task into an algorithm.	I can use filters when searching for digital content.	I can demonstrate safe and respectful use of a range of different technologies and online services.
I can identify the important aspects of a programming task (abstraction).	I can explain in detail how accurate and reliable a webpage and its content is.	I can identify more discrete inappropriate behaviours online. For example, someone who may be trying to groom me or someone else.
I can decompose important aspects of a programming task in a logical way, identifying appropriate coding structures that would work.	I can compare a range of digital content sources and rate them in terms of content quality and accuracy.	I can use critical thinking to help me stay safe online.
I can test and debug my program as I work on it and use logical methods to identify a cause of a bug.	I can consider the intended audience carefully when I design and make digital content.	I know the value of protecting my privacy and others online.
I can identify a specific line of code that is causing a problem in my program and attempt a fix.	I can design and create my own online blogs.	
I can translate algorithms that include sequence, selection and repetition into code and nest these structures within each other.	I can use criteria to evaluate the quality of my own and others digital solutions, suggesting refinements.	
I can use inputs and outputs within my coded programs such as sound, movement and buttons and represent the state of an object		
I can interpret (understand) a program in parts and can make logical attempts to put the separate parts together in an algorithm to explain the program as a whole.		
I can explain the difference between the internet and the World Wide Web.		
I can explain what a WAN and LAN is and describe the process of how access to the internet in school is possible.		

FOCUS FIVE	I know what a secure site is and understand apps that access locations	I can add a timer and a score pad in 2code	I can use simple formulae in a spreadsheet	I can debug a more complex algorithm	I understand digital footprints and inappropriate posts.