Computing Substantive Knowledge Breadth Map
(All units from Purple Mash)

Intent	At Alfred Street Junior School the approach of working together is a key element when teaching the Computing Curriculum. By working together, all children can reach their full potential, learn, and adapt to an ever-changing curriculum and see how the skills in computing are implemented into the wider world. For the school to stay up to date with the latest changes in the topic, we use the 'Purple Mash Computing Scheme', which is an online resource which is always being updated, ensures coverage and progression within computing, and considers the latest trends, whether that is updates to online safety or new/improved programs. Due to the ever-changing landscape of technology, we believe it is important that this isn't the only resource used to ensure a full curriculum in computing, which is why our lessons are also based on the needs of our children. Staying up to date with the latest online trends enables us to ensure the children are as safe as possible when using the internet in and outside of school and they know what is considered responsible use of the technology. Computing is a communal subject, having a very hand on practical and visual approach to the subject enables the inclusion for all children including pupils with SEN and EAL to achieve in the subject and the staff to have the confidence to learn new skills through the process of playing, experimenting, imagination and curiosity. Word processing, coding, a range of multimedia applications, online research, and online safety (taught at least once every half-term based on the latest trends or needs of our children) are the core aspects of the subject which must be covered.

Year 3/4 Cycle B	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Concepts to be developed	**3.2 Online Safety** **3.1 Coding**	**3.3 Spreadsheets**	**3.4** **Touch Typing** **3.5 Email**	**3.6 Branching Databases**	**3.7 Simulations**	**3.8 Graphing**
Year 3 NC Objectives	Use technologies safely, respectfully and responsibly For children to consider if everything they read on websites is true To know where to turn for help if they see inappropriate content or have inappropriate contact from others. To review coding vocabulary that relates to Object, Action, To design and write a program that simulates a physical system.	To create pie charts and bar graphs To use the 'more than', 'less than' and 'equals' tools. To introduce the Advanced Mode of 2Calculate and use coordinates	To introduce typing terminology. Understand the correct way to sit at the keyboard. To learn how to use the home, top and bottom row keys To practise and improve typing for home, bottom, and top rows To practise the keys typed with both hands To open and respond to an email. To write emails safely to someone, using an address book	To sort objects using just YES/NO questions To complete a branching database using 2Question To create a branching database of the children's choice.	To look at and explore simulations To analyse and evaluate a simulation.	To enter data into a graph and answer questions To solve an investigation and present the results in graphic form

Themed Vocab to be taught	**Internet safety**: appropriate, blog, inappropriate, internet, password, personal information, permission, reliable source, reputable source, spoof, verify, websites **Coding**: Action, alert, algorithm, bug, button, code, command, debug, event, flowchart, input, predict, repeat, sequence	Bar chart, cell address, data, equals, less than, more than, pie chart, table	**Touch typing:** key, posture, spacebar, typing **Email:** address book, attachment, BCC, CC, communication, compose, email, inbox, link, mind map, node, password, save to drafts, trusted contacts	Binary tree, branching database, debugging	Advantages, analysis, decision, disadvantages, evaluation, modelling, point-of-view, realistic, simulation, solution, unrealistic	Axis, chart, column, data, graph, investigation, row, sorting, survey, tally chart, titles
Year 3/4 Cycle A	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Concepts to be developed	**4.2 Online Safety** **4.1 Coding**	**4.3 Spreadsheets**	**4.5 Writing for Different Audiences** **4.5 Logo**	**4.6 Animation**	**4.7 Effective Searching**	**4.8** **Hardware Investigators**
Year 4 NC Objectives	To understand how children can protect themselves from online identity theft. Understand that information put online leaves a digital footprint or trail and that this can aid identity theft. To Identify the risks and benefits of installing software including apps. To understand the importance of balancing game and screen time with other parts of their lives.	Use the formula wizard in the advanced mode to add formulae and explore formatting cells. Use a spreadsheet for budgeting. Explore place value in a spreadsheet.	To explore how font size and style can affect the impact of a text. To learn the language of Logo. To input simple instructions on Logo. To use the Repeat function in Logo to create shapes.	To discuss what makes a good, animated film or cartoon and what their favourites are. To learn how animations are created by hand. To find out how 2Animate can be created in a similar way using the computer.	To locate information on the search results page. To use search effectively to find out information. To assess whether an information source is true and reliable.	To understand the different parts that make up a computer. To recall the different parts that make up a computer.
Themed vocab to be taught	**On-line safety:** attachment, collaborate, cookies, copyright, data analysis, digital footprint, malware, plagiarism, report, virus, watermark **Coding:** alert, algorithm, background, button, code blocks, command, co-ordinates, debug, design, object, prompt, implement,	average, budget, calculations, chart, column, decimal point, equal to tool, format cell, formula, formula wizard, line graph, percentage, place value, row	**Writing:** campaign, format, font, genre, opinion, reporter, viewpoint **Logo:** debugging, grid, logo, Logo commands (FD, BK, RT, LT) multi line mode, pen down, prediction, procedure, repeat, run speed,	animation, FPS (frame per second) pause, stop motion	balanced view, internet, key words, reliability, results page, search engine	components, CPU, graphics card, hard drive, hardware, input, motherboard, network card, output, RAM, software

	predict, repeat, run, properties, selection, sequence, timer, variable, value					
Year 5	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Concepts to be developed	**Online Safety 5.1 Coding**	**5.3 Spreadsheets**	**5.4 Databases**	**5.5. Game Creator**	**5.6 3D Modelling**	**5.7 Concept Maps**
Year 5 NC Objectives	To gain a greater understanding of the impact that sharing digital content can have. To review sources of support when using technology. To review children's responsibility to one another in their online behaviour. To understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this. To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. To review coding vocabulary. To use a sketch or storyboard to represent a program design and algorithm. To use the design to create a program.	To convert units of measurements. Formulae including the advanced mode. Using text variables to perform calculations. Using a spreadsheet to plan an event.	To learn how to search for information on a database. To contribute to and create a database around a chosen topic.	To create the game environment. To create the game quest. To finish and share the game. To evaluate their and peers' games.	To explore the effect of moving points when designing. To understand designing for a purpose. To understand printing and making.	To understand the need for visual representation when generating and discussing complex ideas. To understand and use the correct vocabulary when creating a concept map. To create a concept map. To create a collaborative concept map and present this to an audience.

Themed vocab to be taught	**Online safety:** appropriate, avatar, bibliography, collaborate, communication, copyright, critical thinking, digital footprint, encrypt, identity theft, image manipulation, password, personal information, plagiarism, reference, reliability, screenshot, spoof, validity **Coding:** abstraction, action, algorithm, command, co-ordinates, debug, decomposition, efficient, event, flowchart, friction, function, input, predict, properties, random, repeat, selection, sequence, simplify, simulation, tabs, timer, variable	advance mode, area, budget, columns, data, format cell, formula, formula bar, profit, rows, spreadsheet, totalling tool, variable	arrange, avatar, chart, collaboration, data, database, field, group, record, search, sort, statistics	Evaluation, feedback, image, instructions, promotion, quest, scene, screenshot, texture, theme	2D, 3D, 3D printing, CAD-Computer aided design, design brief, Net, pattern fill, points, template	concept, concept, connection, heading, sub-heading, node, presentation mode, story mode
Year 6	**Autumn 1**	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
Concepts to be developed	**6.2 Online Safety** **6.1 Coding**	**6.3 Spreadsheets**	**6.4** **Blogging**	**6.5** **Text Adventures**	**6.6** **Networks**	**6.7** **Quizzing**
Year 6 NC Objectives	Identify benefits and risks of mobile devices broadcasting the location of the user/device, e.g. apps accessing location. Identify the benefits and risks of giving personal information and device access to different software. To begin to understand how information online can persist and give away details of those who share or modify it. To use variables within a game to keep track of the properties of objects.	Explore probability Use of spreadsheets in 'real life' Creating a computational mode. Use a spreadsheet to plan pocket money spending and plan an event.	To identify the purpose of writing a blog. To identify the features of successful blog writing. To consider the effect upon the audience of changing the visual properties of the blog. To understand the importance of regularly updating the content of a blog. To peer-assess blogs against the agreed success criteria.	To find out what a text adventure is. To plan a story adventure. To introduce map-based text adventures. To code a map-based text adventure.	To find out what a LAN and a WAN are. To find out how we access the internet in school. To research and find out about the age of the internet. To think about what the future might hold regarding technology.	To explore online quizzes. To learn how to use the question types within 2Quiz to make a quiz for younger children. To make a quiz that requires the player to search a database.

	To organise code into functions and Call functions to eliminate surplus code in the program.					
Themed vocab to be taught	**Online safety:** data analysis, digital footprint, inappropriate, location sharing, password, PEGI rating **Coding:** algorithm, command, debug, decomposition, flowchart, function, input, object, predict, procedure, properties, repeat until, selection, sequence, simulation, tabs, x and y properties	Budget, chart, column, expenses, format cell, formula, move cell tool, probability, profit, rows, spreadsheet	Approval, archive, blog, post, collaborate, vlog	Debug, function, link, QR code, repeat, sprite, text adventure, selection, variables	DNS (domain name server) ethernet, hosting, internet, IP address, ISP (internet service provider) LAN (local area network) router, search engine, website, Wi-Fi – world wide web	Audience, audio, case-sensitive, clipart, clone, cloze, image, selfie, statistics, undo/redo, preview, quiz