|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Computing**  **Core Curriculum Coverage**  **Class 2**  **Year B** | | | | |
|  | **Autumn Term** | **Spring term** | **Summer Term** | |
| **Unit of work** | Online Safety  Maze Explorer  Questioning | Online Safety  Animated Story Books  Making Music | Spreadsheets  Pictogram  Presenting Ideas | |
| **Prior Learning** | Used Mini mash and logged in with support from an adult.  Used beebots to create algorithms and make the robot move. | Used simple algorithms and make logical decision  Sequencing and following instructions | Spreadsheet navigation  Aware of data and how it can be used.  Representing data in different ways. | |
| **Core Learning**  **Knowledge** | * 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 | | |  |
| **Core Learning**  **Skills** | * To log in safely. * To learn the basic features of purple mash. * To explore the Tools and Games section of Purple Mash To learn how to open, save and print. * To understand the importance of logging out | * To introduce Email as a communication tool using 2Respond simulations. * To understand how we should talk to others in an online situation. * To open and send simple online communications in the form of email. * To understand that information put online leaves a digital footprint or trail. * To identify the steps that can be taken to keep personal data and hardware secure. | * To use 2Calculate image, lock, move cell, speak and count tools to make a counting machine. * To learn how to copy and paste in 2Calculate. * To use the totalling tools. * To use a spreadsheet for money calculations. * To use the 2Calculate equals tool to check calculations. * To use 2Calculate to collect data and produce a graph. | |
| * To understand the functionality of the direction keys. * To understand how to create and debug a set of instructions (algorithm). * To use the additional direction keys as part of an algorithm. * To understand how to change and extend the algorithm list. * To create a longer algorithm for an activity. | * To introduce e-books and the 2Create a Story tool. * To add animation to a story. * To add sound to a story, including voice recording and music the children have composed. * To work on a more complex story, including adding backgrounds and copying and pasting pages. * To share e-books on a class display board. | * To understand that data can be represented in picture format. * To contribute to a class pictogram. * To use a pictogram to record the results of an experiment. | |
| * To learn about data handling tools that can give more information than pictograms. * To use yes/no questions to separate information. * To construct a binary tree to identify items. * To use 2Question (a binary tree database) to answer questions. * To use a database to answer more complex search questions. * To use the Search tool to find information. | * To make music digitally using 2Sequence. * To explore, edit and combine sounds using 2Sequence. * To edit and refine composed music. * To think about how music can be used to express feelings and create tunes which depict feelings. * To upload a sound from a bank of sounds into the Sounds section. * To record and upload environmental sounds into Purple Mash. * To use these sounds to create tunes in 2Sequence. | * To explore how a story can be presented in different ways. * To make a quiz about a story or class topic. * To make a fact file on a non-fiction topic. * To make a presentation to the class. | |
| **Vocabulary** | Login, username, password, save, tools  Direction, arrows, debug, instructions, algorithms  Question, Data, Binary tree, database, pictogram | Search, internet, sharing, email, digital footprint, attachment  Animation, e-book, font, file, sound effect, display board  Bpm, composition, digital, instrument, sound effect, tempo, volume | Backspace, copy & paste, columns, cells, delete, equals tool, spreadsheet.  Pictogram, data, collate  Mind map, animated, quiz, presenting data, narrative | |
| **Personal Development** | * Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects. * The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity. * An understanding of the connected nature of devices. * The ability to communicate ideas well by using applications and devices throughout the curriculum. * The ability to collect, organise and manipulate data effectively.   Pupils develop an understanding of how subjects and specific skills are linked to future jobs. | | | |
| **End of Unit Application Task** | What is a password and why should we keep them safe?  What is a digital avatar?  Where is my work stored on Purple Mash?  What is 2Go?  How do I undo a mistake on 2Go?  How does a Pictogram show information?  How is information organised in a binary tree?  How can a database help organise information? | Why is a search bar useful?  What is an email?  What is meant by my Digital Footprint?  What is 2Create a Story?  What is an animated story?  How can I make my story better?  What is meant by digital music?  How can I change how my music sounds?  What is it meant by the tempo of the music? | Why would you copy and paste when using a spreadsheet?  How could a spreadsheet help you when you are planning some shopping?  How could you look at a graph to see which option was most popular?  In what ways could you use a pictogram?  What do we need to think about when planning a presentation?  Why should I plan out my presentation? | |
| **Assessment** | End of unit quiz on purplemash | | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Computing**  **Core Curriculum Coverage 2022-23**  **Class 3 Cycle B** | | | |
|  | **Autumn Term** | **Spring term** | **Summer Term** |
| **Unit of work** | Online Safety  Coding  Spreadsheets | Writing for different audiences  Logo  Animation | Effective Search  Hardware Investigation |
| **Prior Learning** | Children have learnt about basic online safety and the importance of keeping their login details private.  Children have looked at directional keys to make something move on a screen (algorithms)  Children have learnt how to gather data and input the data into a spreadsheet and create a graph. | Children have created animated story books using purplemash and making changes to their animations to make their story better.  children have looked at directional keys to make something move on a screen (algorithms) | Children will have previously used search engines and websites during research lessons such as geography and history.  Children have learnt about composing their own pieces of electronic music using vocabulary such as Tempo & volume. |
| **Core Learning**  **Knowledge** | * 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. | | |
| **Core Learning**  **Skills** | * To understand how children can protect themselves from online identity theft. * Understand that information put online leaves a digital footprint * To Identify the risks and benefits of installing software including apps. * To understand that copying the work of others and presenting it as their own is called 'plagiarism' and to consider the consequences of plagiarism. * To identify appropriate behaviour when participating or contributing to collaborative online projects for learning. * To identify the positive and negative influences of technology on health and the environment. * To understand the importance of balancing game and screen time with other parts of their lives. | * To explore how font size and style can affect the impact of a text. * To use a simulated scenario to produce a news report. * To use a simulated scenario to write for a community campaign. | * 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 use selection in coding with the ‘if/else’ command. * To understand and use variables in 2Code. * To use flowcharts for design of algorithms including selection. * To use the ‘repeat until’ with variables to determine the repeat. * To learn about and use computational thinking terms decomposition and abstraction. | * To learn the structure of the coding language of Logo. * To input simple instructions in Logo. * Using 2Logo to create letter shapes. * To use the Repeat function in Logo to create shapes. * To use and build procedures in Logo. | * To understand the different parts that make up a computer. * To recall the different parts that make up a computer. |
| * Formatting cells as currency, percentage, decimal to different decimal places or fraction. * Using the formula wizard to calculate averages. * Combining tools to make spreadsheet activities such as timed times tables tests. * Using a spreadsheet to model a real-life situation. * To add a formula to a cell to automatically make a calculation in that cell. | * To discuss what makes a good animated film or cartoon. * To learn how animations are created by hand. * To find out how 2Animate can be created in a similar way using the computer. * To learn about onion skinning in animation. * To add backgrounds and sounds to animations. * To be introduced to ‘stop motion’ animation. * To share animation on the class display board and by blogging. | * To identify and discuss the main elements of music. * To understand and experiment with rhythm and tempo. * To create a melodic phrase. * To electronically compose a piece of music. |
| **Vocabulary** | Virus, cookies, copyright, digital footprint, email, malware, phishing, plagiarism, SPAM  Action, alert, algorithm, bug, command, control, debug, if/else, input, output, variable.  Average, copy & paste, cell, column, chart, equal to, rows, spreadsheet | Font, bold, italic, underline  LOGO, BK, FD, RT, LT, REPEAT, SETPC, SETPS, PU, PD  Animation, flipbook, frame, onion skinning, background, play, stop motion, videoclip | internet, internet browser, search engine, search, spoof website, website.  Motherboard, CPU, RAM, Graphics card, monitor, speaker, mouse, software, hardware.  BPM, dynamics, harmonious, melody, pitch, pulse,rhythm, tempo, texture, synthesizer. |
| **Personal Development** | * Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects. * The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity. * An understanding of the connected nature of devices. * The ability to communicate ideas well by using applications and devices throughout the curriculum. * The ability to collect, organise and manipulate data effectively.   Pupils develop an understanding of how subjects and specific skills are linked to future jobs. | | |
| **End of Unit Application Task** | What is meant by a digital footprint?  What is SPAM?  What is meant by plagiarism?  Explain the stages of the design, code, test, debug coding process.  How can variable and if/else statements be useful when coding?  What do the terms decomposition and abstraction mean? Use examples to explain them.  How would you add a formula so that the cell shows the percentage score for a test?  Which tools would you use to create a timed times tables test in 2Calculate?  Give an example of the data that could be best represented by a line graph.  Explain what a spreadsheet model of a real-life situation is and what it can be used for? | Why should I change the font when I am writing?  What is Logo?  What is an animation?  What is meant by onion skinning?  What is meant by stop frame animation? | What is a search engine?  How can you tell if a website is reliable or not?  What is the difference between hardware and software?  What is the difference between melody and rhythm? |
| **Assessment** | End of unit quiz on purplemash | | |

|  |  |  |  |
| --- | --- | --- | --- |
| **Computing**  **Core Curriculum Coverage**  **Class 4**  **Cycle B** | | | |
|  | **Autumn Term** | **Spring term** | **Summer Term** |
| **Unit of work** | Online Safety  Coding  Spreadsheets | Blogging  Text Adventures Network  Understanding Binary | Network  Quizzing  Spreadsheets (google sheets) |
| **Prior Learning** | Keeping safe online and reliable sources.  digital footprint  Text-based coding  understanding of coding structures and used them correctly.  efficient coding and simulating a physical system.  Used a variety of tools to make effective spreadsheets and used data to create graphs. | Responsible use of the internet and digital footprint.  plagiarism and searching the internet.  Used music and sounds in stop animation creation.  Adding sound effects and background music to themed 3D games | Safe and effective searching on the internet.  Knowledge of the hardware used to make devices function.  Sending and receiving emails.  Branching databases and understanding yes/no questions.  creating and searching a database for information.  Creating and playing games.  Spreadsheets on purplemash |
| **Core Learning**  **Knowledge** | * 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. | | |
| **Core Learning**  **Skills** | * Identify benefits and risks of mobile devices broadcasting the location of the user/device. * Identify secure sites by looking for privacy seals of approval. * Identify the benefits and risks of giving personal information. * To review the meaning of a digital footprint. * To have a clear idea of appropriate online behaviour. * To begin to understand how information online can persist. * To understand the importance of balancing game and screen time with other parts of their lives. * To identify the positive and negative influences of technology on health and the environment. | * To identify the purpose of writing a blog. * To identify the features of a successful blog. * To plan the theme and content for a blog. * To understand how to write a blog and a blog post. * To consider the effect upon the audience of changing the visual properties of the blog. * To understand how to contribute to an existing blog. * To understand how and why blog posts are approved by the teacher. * To understand the importance of commenting on blogs. | * To learn about what the Internet consists of. * To find out what a LAN and a WAN are. * To find out how the Internet is accessed in school. * To research and find out about the age of the Internet. To think about what the future might hold. |
| * To use the program design process, including flowcharts, to develop algorithms for more complex programs using and understanding of abstraction and decomposition to define the important aspects of the program. * To code, test and debug from these designs. * To use functions and tabs in 2Code to improve the quality of the code. * To code user interactivity using input functions. | * To find out what a text adventure is. * To plan a story adventure. * To make a story-based adventure. * To introduce map-based text adventures. * To code a map-based text adventure. | * To create a picture-based quiz for young children. * To learn how to use the question types within 2Quiz. * To explore the grammar quizzes. * To make a quiz that requires the player to search a database. |
| * To use a spreadsheet to investigate the probability of the results of throwing many dice. * Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell. * To create graphs showing the data collected. * To type in a formula for a cell to automatically make a calculation in that cell. * Using a spreadsheet to create computational models and answer questions. | * To know what the terms binary and denary mean and how they relate to the number system, the digital system and the terms base-10 and base-2 * To relate binary to the on and off states of electrical switches. * To convert numbers from decimal to binary. * To convert numbers from binary to decimal. * To represent states of object in their own program using binary. | * To know what a spreadsheet looks like. * To navigate and enter data into cells. * To introduce some basic data formulae for percentages, averages and max and min numbers. * To demonstrate how the use of spreadsheets can save time and effort when performing calculations. * To use a spreadsheet to model a situation. * To demonstrate how a spreadsheet can make complex data clear by manipulating the way it is presented. * To create a variety of graphs in sheets. * To apply spreadsheet skills to solving problems. |
| **Vocabulary** | Digital footprint, password, PEGi rating, Phishing, screen time, spoof websites  Action, alert, algorithm, bug, code design, command, control, function, debug, if/else, input, output, sequence, variable.  Average, advanced mode, copy & paste, cell, column, chart, count tool, equal to, rows, spreadsheet, formula, formula wizard. | Approval, archive, blog, post, collaborate, commenting, vlog  Text-based adventure, concept map, debugging, sprite, function  Base 10, base 2, binary, bit, byte, decimal, denary, gigabyte, kilobyte, megabyte, terabyte, integer, machine code, nibble, switch, transistor | Internet, world wide web, network, local area network (LAN), wide area network (WAN), router, network cable, wireless.  Audience, Collaboration, mind map, database, quiz  Autofit, cell, cell reference, chart, column, computational model, conditional formatting, data, delimiter, formula, formula bar, graph, range, spreadsheet, text wrapping. |
| **Personal Development** | * Competence in coding for a variety of practical and inventive purposes, including the application of ideas within other subjects. * The ability to connect with others safely and respectfully, understanding the need to act within the law and with moral and ethical integrity. * An understanding of the connected nature of devices. * The ability to communicate ideas well by using applications and devices throughout the curriculum. * The ability to collect, organise and manipulate data effectively.   Pupils develop an understanding of how subjects and specific skills are linked to future jobs. | | |
| **End of Unit Application Task** | Why do I need to be aware of the dangers of being online?  What is meant by my digital footprint?  Why is it important to think about how much time use a screen for?  How can you use Tabs in 2Code Gorilla?  What is a function in coding? Give an example that you have used in 2Code Gorilla.  In 2Code Gorilla, how can a program receive user input?  How would you add a formula so that the cell shows the total of a column of cells?  What is a computational model and what it can be used for?  If you were going to use a spreadsheet to plan your dream holiday. What data would you collect to cost the trip? | What is a blog?  What can a blog be about?  How are the audience involved in a blog?  What is a text based adventure?  Why is it important to plan a text based adventure?  How does binary relate to the programs that you use or create?  How does binary relate to computer memory?  How would you write the numbers 0 to 10 in binary? | What is the difference between the Internet and the World Wide Web?  What is the difference between a LAN and a WAN?  Who is Tim Berners-Lee?  What factors do you need to consider when creating a quiz?  Name three question types in 2Quiz  Apart from the questions, what else does a quiz need to contain?  What is a spreadsheet used for?  How do you carry out a multiplication calculation?  How does using the SUM function save time? |
| **Assessment** | End of unit quiz on purplemash | | |