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| **Computing**  **Core Curriculum Coverage**  **Class 2**  **Year A** | | | |
|  | **Autumn Term** | **Spring term** | **Summer Term** |
| **Unit of work** | Online Safety  Effective searching  Lego Builders | Technology outside school  Grouping & Sorting  Creating Pictures | Spreadsheets  Coding 1.7  Coding 2.1 |
| **Prior Learning** | Used Mini mash and logged in with support from an adult.  Used beebots to create algorithms and make the robot move.  Turn devices off and on. | Children have done a topic based on their community and things around them.  Children have used manipulatives to gather data by sorting into groups. | Used beebots to create algorithms and make the robot move.  Turn devices off and on.  followed and created simple instructions on a computer. |
| **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 walk around the local community and find examples of where technology is used. * To record examples of technology outside school. | * To know what a spreadsheet program looks like. * How to open 2Calculate in Purple Mash. * How to enter data into spreadsheet cells. * To use 2Calculate image tools to add clipart to cells. * To use 2Calculate control tools: lock, move cell, speak and count. |
| * To understand the terminology associated with searching. * To gain a better understanding of searching on the Internet. * To create a leaflet to help someone search for information on the Internet. | * To sort items using a range of criteria. * To sort items on the computer using the ‘Grouping’ activities in Purple Mash. | * To understand what coding means. * To use design mode to set up a scene. * To add characters. * To use code blocks to make the character perform actions. * To use collision detection. |
| To compare the effects of adhering strictly to instructions to completing tasks without complete instructions.   * To follow and create simple instructions on the computer. * To consider how the order of instructions affects the result. | * To learn the functions of the 2Paint a Picture tool. * To learn about and recreate the Impressionist style of art (Monet, Degas, Renoir). * To recreate Pointillist art and look at the work of pointillist artists such as Seurat. * To learn about the work of Piet Mondrian and recreate the style using the lines template. * To learn about the work of William Morris and recreate the style using the patterns template. | * To understand what an algorithm is. * To design algorithms and then code them. * To compare different object types. * To use the repeat command. * To use the timer command. * To know what debugging is and debug programs. |
| **Vocabulary** | Login, username, password, save, tools  internet, search, search engine  instructions, algorithms, computer, program, debug | technology  Sort, criteria  impressionism, palette, pointillism, share, surrealism, template | Arrow key, back key, cursor, column, cells, clipart, count tool, lock key, move cell key, rows, spreadsheet  Action, background, button, character, code block, code design, coder, coding, collision detection, command, input, program, stop, when clicked.  algorithm, bug, dubbed, design mode, input, repeat, timer, scale |
| **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?  How can I search the Internet?  What is an instruction?  Why do we need to debug code? | What is technology?  How does technology make our lives easier?  In what ways can we sort objects?  What are the main features of Impressionism?  What are the main features of Pointillism?  What are the main features of Surrealism? | What does a spreadsheet look like?  How could you use a spreadsheet to add up values?  How could you use the count and speak tools?  What is coding?  How can you make characters move in a 2Code program?  Why is it useful to design before coding?  What is an algorithm? Why is it useful in coding?  Can you explain what the repeat command and the timer command do?  If you are good at coding, you don’t need to debug. Is this true? |
| **Assessment** | End of unit quiz on purplemash | | |

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| **Computing**  **Core Curriculum Coverage**  **Class 3**  **Year A** | | | |
|  | **Autumn Term** | **Spring term** | **Summer Term** |
| **Unit of work** | Online Safety  Coding  Spreadsheets | Touch Typing  Email  Branching Database | Simulations  Graphing  Presenting (google slides) |
| **Prior Learning** | Children are aware of logging in and logging off and the importance of this. They have their own password and know to keep this information private.  Used coding as block coding.  Used and followed a set of instructions  Creating programs using sequencing and repeat.  Basic knowledge of 2calculate | General use of Purple Mash. Simple text entry by typing. Use of a writing template  Sort items on the computer using the ‘Grouping’ activities in Purple Mash.  Explored different types of technology | Following instructions and creating algorithms  Collision detection - simulating air traffic control  debugging  Use of 2Calculate to collect data and produce a graph  Use of questioning to separate and group data  Presenting the same information in different styles  Presenting ideas in art form |
| **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 know what makes a safe password. * Methods for keeping passwords safe. * To understand how the Internet can be used in effective communication. * To understand how a blog can be used to communicate with a wider audience. * To consider the truth of the content of websites. * To learn about the meaning of age restrictions symbols on digital media and devices | * To introduce typing terminology. * To understand the correct way to sit at the keyboard. * To learn how to use the home, top and bottom row keys. * To practice typing with the left and right hand. | * To consider what simulations are. * To explore a simulation. * To analyse and evaluate a simulation. |
| * To design algorithms using flowcharts. * To design an algorithm that represents a physical system and code this representation. * To use selection in coding with the ‘if’ command. * To understand and use variables in 2Code. * To deepen understanding of the different between timers and repeat commands. | * To think about different methods of communication. * To open and respond to an email using an address book. * To learn how to use email safely. * To add an attachment to an email. * To explore a simulated email scenario. | * To enter data into a graph and answer questions. * To solve an investigation and present the results in graphic form. |
| * To use the symbols more than, less than and equal to, to compare values. * To use 2Calculate to collect data and produce a variety of graphs. * To use the advanced mode of 2Calculate to learn about cell references | * To sort objects using just ‘yes’ or ‘no’ questions. * To complete a branching database using 2Question. * To create a branching database of the children’s choice. | * To understand the purpose of the Slides tool. * To add slides to presentations. * To add media to presentations. * To format text appropriately. * To add shapes and lines to enhance a presentation. * To use the skills learnt to design and create an engaging presentation. |
| **Vocabulary** | Password, internet, blog, mind map, username, website, webpage, spoof website, PEGi rating.  Action, alert, algorithm, bug, code block, code design, command, control, debug, if, event, input, output, object, properties, timer, variable.  < > =, advanced mode, copy & paste, column, cells, rows, equals tool, move cell tool, spin tool, spreadsheet. | Posture, top row key, bottom row key, home row key, space bar.  Communication, compose, email, send, report, attachment, address book, save to draft, password, cc formatting.  branching database, data, database, question | Simulation, evaluate  graph, field, data, bar chart, block graph, line graph  animation, border properties, font formatting, layer, media, presentation, transition, text box, slide, word art. |
| **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?  Is everything I read on the Internet true?  How do I know if I am old enough to play a computer game?  What is the difference between the different object types in 2Code Gibbon level?  What does selection mean in coding and how can you achieve this in 2Code?  Give an example of how you could use a variable in coding.  Explain how you would collect data to find out children’s favourite school subjects. What sort of graph would you create?  How can you make a 3 times table machine using the spin tool? Could you use the equals tool to check your answer  Explain how you would locate a cell in the advanced mode? | Why should I have a good posture at the computer?  Why should I type certain keys with certain fingers?  What is email?  What should I do if I receive an email that makes me upset or scared?  What information can I send in an email?  What is meant by data?  What is a database?  What is a branching database? | What is a computer simulation?  What kind of simulations are there?  Are there any problems with simulations?  What is a graph?  What are the frame lines on the graph called?  What different kinds of graphs are there?  What is a presentation program used for?  What features can you use to make a presentation more engaging?  How do you add a transition to a presentation? |
| **Assessment** | End of unit quiz on purplemash | | |

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| **Computing**  **Core Curriculum Coverage**  **Class 4**  **Year A** | | | |
|  | **Autumn Term** | **Spring term** | **Summer Term** |
| **Unit of work** | Online Safety  Coding  Spreadsheets | Databases  Game Creator | 3D Modelling  Concept Maps  Word processing (google docs) |
| **Prior Learning** | Good passwords and keeping them safe. staying safe online.  Aware of age appropriate content and games.  designing and creating algorithms and debugging programs.  2Calculate to collect data and produce a variety of graphs. | Created their own databases  Branching database using 2Question  Presenting data with a line graph  Electronically compose a themed piece of music on Busy Beats  Create a stop motion animation using 2Animate | Create a stop motion animation using 2Animate  Use of art tools to create backgrounds and effects  Learning about good presentations: both content and delivery  Transferring information from a concept map into a written report |
| **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 gain a greater understanding of the impact that sharing digital content can have. * To review sources of support when using technology and children’s responsibility to one another in their online behaviour. * To know how to maintain secure passwords. * 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 learn about how to reference sources in their work * To search the Internet with a consideration for the reliability of the results of sources to check validity and understand the impact of incorrect information. | * To learn how to search for information in a database. • * To contribute to a class database. * To create a database around a chosen topic. | * To be introduced to 2Design and Make and the skills of computer aided design. * To explore the effect of moving points when designing. * To design a 3D Model to fit certain criteria. * To refine and print a model |
| * To represent a program design and algorithm. * To create a program that simulates a physical system using decomposition. * To explore string and text variable types so that the most appropriate can be used in programs. * To use the Launch command in 2Code Gorilla * To program a playable game with timers and scorepad. | * To set the scene. * To create the game environment. * To create the game quest. * To finish and share the game. * To evaluate their and peers’ games. | * 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 understand how a concept map can be used to retell stories and present information. * To create a collaborative concept map and present this to an audience |
| * Using the formula wizard to add a formula to a cell to automatically make a calculation in that cell. * To copy and paste within 2Calculate. * Using 2Calculate tools to test a hypothesis. * To add a formula to a cell to automatically make a calculation in that cell. * Using a spreadsheet to model a real-life situation and answer questions. |  | * To know what a word processing tool is for. * To add and edit images to a word document. * To know how to use word wrap with images and text. To change the look of text within a document. * To add features to a document to enhance its look and usability. * To use the sharing capabilities in Google Docs. * To use tables within to present information. * To introduce children to templates. |
| **Vocabulary** | Online safety, smart rules, password, reputable, encryption, identity theft, shared image, plagiarism, citations, references, Bibliography  Action, alert, algorithm, bug, command, code design, control, debug, if/else, input, output, variable, object, repeat, sequence, simulation, variable  Average, copy & paste, cell, column, chart, equals tools, rows, spreadsheet, Formula, Formula wizard, random tool, timer | Arrange, avatar, chart, collaborative, data, database, field, group, record, database report, group, search, statistics, sort.  Animation, computer game, customise, evaluation, image, instruction, interactive, screenshot, texture, perspective, playability. | 2D, 3D, 3D printing, Computer Aided Design (CAD), Design brief, net, points, pattern fill, template  Audience, collaboratively, concept, concept map, connection, idea, node, thought, visual  bullet points, caps lock, captions, copy & paste, copyright document, cursor, font, hyperlink, merge cells, page orientation, formatting, text wrapping, readability, word art. |
| **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** | Who do I tell if I see anything online that makes me upset or scared?  Why are passwords so important?  Why is it important to reference sources in my work?  What does simulating a physical system mean?  Describe how you would use variables to make a timer countdown and a scorepad for a game.  Give examples of how you could use the Launch command in 2Code.  How would you add a formula so that the cell shows the product of two other cells?  What would you use in 2Calculate to have a cell that automatically calculates the number of days since a certain date?  Explain what a spreadsheet model of a real-life situation is and what it can be used for? | What is a database?  Why is the collaborative feature important?  In what ways can I sort information in a database?  What is the 2DIY3D tool on Purple Mash?  What makes a good computer game?  Why is it important to continually evaluate your game? | What are the different views of an object available in 2Design and Make?  How is CAD software used in industry? Give some examples  How can the objects designed in 2Design and Make be turned into 3D objects?  What is a concept map?  How is information arranged on a concept map?  How does a concept map help share ideas?  What is a word processing tool used for?  What features can you use to make a document more readable?  How do you successfully add an image to a document? |
| **Assessment** | End of unit quiz on purplemash | | |