



# Computing Medium Term Plan - Year 5/6 - Cycle A

|                             | Autumn 1 -Coding                                                                                                                                                                                                                                                                                                                                     | Autumn 2 - Online Safety                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Spring 1 - Spreadsheets                                                                                                                                                                                                                                                                                                                                                              | Spring 2 - Databases                                                                                                                                          | Summer 1 - Game Creator                                                                                                                                                    | Summer 2 - Concept Maps                                                                                                                                                                                                                                                                                                                                                                                        |
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| <b>Big Concept</b>          |                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                    |                                                                            | <br> |                                                                                                                                                                                                                                                                                                                             |
| <b>Big questions</b>        | What does simulating a physical system mean?                                                                                                                                                                                                                                                                                                         | Why are passwords so important?<br>Why is it important to reference sources in my work?                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | How would you add a formula so that the cell shows the product of two other cells?                                                                                                                                                                                                                                                                                                   | What is a database?<br>Why is the collaborative feature important?<br>In what ways can I sort information in a database?                                      | What makes a good computer game?<br>Why is it important to continually evaluate your game?                                                                                 | What is a concept map?<br>How is information arranged on a concept map?<br>How does a concept map help share ideas?                                                                                                                                                                                                                                                                                            |
| <b>Vision and rationale</b> | Children will represent a program design and algorithm and create a program that simulates a physical system using decomposition. They will explore string and text variable types so that the most appropriate can be used in programs. Children will use the Launch command in 2Code Gorilla and program a playable game with timers and scorepad. | Children will gain a greater understanding of the impact that sharing digital content can have. They will review sources of support when using technology and children's responsibility to one another in their online behaviour. Children will know how to maintain secure passwords. Pupils will understand the advantages, disadvantages, permissions and purposes of altering an image digitally and the reasons for this. They will be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online. Children will learn about how to reference sources in their work and how 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. They will be ensuring reliability through using different methods of communication. | Using the formula wizard, children will add a formula to a cell to automatically make a calculation in that cell. They will copy and paste within 2Calculate and use 2Calculate tools to test a hypothesis. Children will add a formula to a cell to automatically make a calculation in that cell. They will use a spreadsheet to model a real life situation and answer questions. | Children will learn how to search for information in a database and how to contribute to a class database. They will create a database around a chosen topic. | Children will learn how to set the scene, create the game environment and create the game quest. They will finish and share the game and evaluate their and peers' games.  | Children will understand the need for visual representation when generating and discussing complex ideas. They will understand and use the correct vocabulary when creating a concept map. Children will be able to create a concept map and understand how a concept map can be used to retell stories and present information. They will create a collaborative concept map and present this to an audience. |



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| <b>Prior Knowledge</b>  | <ul style="list-style-type: none"> <li>Logical decision processing</li> <li>Modelling selection on a binary model.</li> </ul> <p>Code, test, debug process</p> <ul style="list-style-type: none"> <li>IF statements</li> <li>Repeat Until and IF/ ELSE Statements</li> <li>Number Variables</li> </ul> <p>Text-based coding</p> <ul style="list-style-type: none"> <li>Utilise understanding of coding structures</li> <li>Sequencing and animation in logical steps</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | <ul style="list-style-type: none"> <li>Evaluating communications</li> <li>Email safety</li> <li>Sharing images - safety</li> <li>Not meeting</li> <li>Email attachments</li> <li>Phishing</li> <li>Digital footprint</li> <li>Malware and viruses</li> <li>Plagiarism</li> <li>Screen time</li> <li>Reliable sources</li> <li>Search algorithms - impact on what you see</li> </ul> | <ul style="list-style-type: none"> <li>Data representation</li> <li>Use software to investigate data</li> <li>Formula wizard</li> <li>Cell formatting</li> <li>Timer, random number and spin buttons</li> <li>Budget planner sheet</li> <li>Line graphs</li> </ul> | <ul style="list-style-type: none"> <li>Displaying and interrogating data in a graph form.</li> <li>Inputting and examining data</li> <li>Presenting data through line graphs</li> </ul> | <ul style="list-style-type: none"> <li>Concept of background (static) and foreground (can move).</li> <li>Digitally creating music and sound effects.</li> <li>Create a stop motion animation using 2Animate</li> <li>Use of sounds, backgrounds and effects</li> </ul> | <ul style="list-style-type: none"> <li>Creating text and the use of illustrations to convey meaning</li> <li>Creating work for a variety of purposes</li> <li>Presenting the same information in different styles: animated story, quiz based on a story, concept map of a story, writing template</li> <li>Keyboard skills</li> <li>Typing fluency</li> <li>Learning about good presentations: both content and delivery</li> <li>Understanding importance of text formatting and organisation</li> <li>Transferring information from a concept map into a written report</li> </ul> |
| <b>Key Vocabulary</b>   | <p>Action, Alert, Algorithm, Bug, Code Design, Command, Control, Debug/Debugging, Design Mode, Event, Get Input, If, If/Else, Input, Object, Output, Repeat, Selection, Simulation, Sequence, Timer, Variable.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>Online safety, Smart rules, Password, Reputable, Encryption, Identity theft, Shared image, Plagiarism, Citations, Reference, Bibliography.</p>                                                                                                                                                                                                                                   | <p>Average, Advance mode, Copy and Paste, Columns, Cells, Charts, Equals tool, Formula, Formula Wizard, Move cell tool, Random tool, Rows, Spin Tool, Spreadsheet, Timer.</p>                                                                                      | <p>Avatar, Binary tree (branching database), Charts, Collaborative, Data, Database, Find, Record, Sort, Group and Arrange, Statistics and reports, Table.</p>                           | <p>Animation, Computer game, Customise, Evaluation, Image, Instructions, Interactive, Screenshot, Texture, Perspective, Playability.</p>                                                                                                                                | <p>Audience, Collaboratively, Concept, Concept Map, Connection, Idea, Node, Thought, Visual.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Key Resources</b>    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                    |                                                                                                                                                                                         |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Computing skills</b> | <p><b>Computer science</b></p> <ul style="list-style-type: none"> <li>I attempt to turn more complex real-life situations into algorithms for a program by deconstructing it into manageable parts.</li> <li>I can test and debug my programs as I go.</li> <li>I can use logical methods to identify the approximate cause of a bug with help.</li> <li>I can translate algorithms that include sequence, selection and repetition into code.</li> <li>I can combine sequence, selection and repetition with other coding structures to achieve my algorithm design.</li> <li>I can use tabs to organise code and name variables.</li> <li>I understand the value of computer networks but are also aware of the main dangers.</li> <li>I recognise what personal information is and can explain how this can be kept safe.</li> </ul> <p><b>Information technology</b></p> <ul style="list-style-type: none"> <li>I can search with greater complexity for digital content when using a search engine.</li> <li>I can explain in some detail how credible a webpage is and the information it contains.</li> <li>I can make appropriate improvements to digital solutions based on feedback received.</li> <li>I can collaboratively create content and solutions using digital features.</li> <li>I can use several ways of sharing digital content (Email, blog, display boards).</li> </ul> <p><b>Digital literacy</b></p> <ul style="list-style-type: none"> <li>I can demonstrate the safe and respectful use of a few different technologies and online services.</li> <li>I can relate appropriate online behaviour to my right to personal privacy and mental wellbeing of myself and others.</li> </ul> |                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                    |                                                                                                                                                                                         |                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |