

# Computing Year 5/6 Medium Term plans and Objectives

## Autumn

### Unit 5.1 – Coding

Lesson	Title	Aims (Objectives)	Success Criteria
1	Coding Efficiently	<ul style="list-style-type: none"> <li>To review existing coding knowledge.</li> <li>To begin to be able to <b>simplify</b> code.</li> <li>To create a playable game.</li> </ul>	<ul style="list-style-type: none"> <li>Children can use simplified code to make their programming more efficient.</li> <li>Children can use variables in their code.</li> <li>Children can create a simple playable game.</li> </ul>
2	Simulating a Physical System	<ul style="list-style-type: none"> <li>To understand what a simulation is.</li> <li>To program a simulation using 2Code.</li> </ul>	<ul style="list-style-type: none"> <li>Children can plan an algorithm modelling the sequence of traffic lights.</li> <li>Children can select the right images to reflect the simulation they are making.</li> <li>Children can use their plan to program the simulation to work in 2Code.</li> </ul>
3	Decomposition and Abstraction	<ul style="list-style-type: none"> <li>To know what decomposition and abstraction are in Computer Science.</li> <li>To take a real-life situation, decompose it and think about the level of abstraction.</li> <li>To use decomposition to make a plan of a real-life situation.</li> </ul>	<ul style="list-style-type: none"> <li>Children can make good attempts to break down their task into smaller achievable steps.</li> <li>Children recognise the need to start coding at a basic level of abstraction to remove superfluous details from their program that do not contribute to the aim of the task.</li> </ul>
4	Friction and Functions	<ul style="list-style-type: none"> <li>To understand how to use friction in code.</li> <li>To begin to understand what a function is and how functions work in code.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create a program which represents a physical system.</li> <li>Children can create and use functions in their code to make their programming more efficient.</li> </ul>

5	Introducing Strings	<ul style="list-style-type: none"><li>• To understand what the different variable types are and how they are used differently.</li><li>• To understand how to create a string.</li></ul>	<ul style="list-style-type: none"><li>• Children can create and use strings in programming.</li><li>• Children can set/change variable values appropriately.</li><li>• Children know some ways that text variables can be used in coding.</li></ul>
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6	Text Variables and Concatenation	<ul style="list-style-type: none"> <li>To begin to explore text variables when coding.</li> <li>To understand what concatenation is and how it works.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create a string and use it in their program.</li> <li>Children can use strings to produce a range of outputs in their program.</li> </ul>
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## Unit 5.2 – Online Safety

Lesson	Title	Aims (Objectives)	Success Criteria
1	Responsibilities and Support when Online	<ul style="list-style-type: none"> <li>To gain a greater understanding of the impact that sharing digital content can have.</li> <li>To review sources of support when using technology.</li> <li>To review children' responsibility to one another in their online behaviour.</li> </ul>	<ul style="list-style-type: none"> <li>Children critically about the information that they share online both about themselves and others.</li> <li>Children know who to tell if they are upset by something that happens online.</li> <li>Children can use the SMART rules as a source of guidance when online.</li> </ul>
2	Protecting Privacy	<ul style="list-style-type: none"> <li>To know how to maintain secure passwords.</li> <li>To understand the advantages, disadvantages, permissions, and purposes of altering an image digitally and the reasons for this.</li> <li>To be aware of appropriate and inappropriate text, photographs and videos and the impact of sharing these online.</li> </ul>	<ul style="list-style-type: none"> <li>Children think critically about what they share online, even when asked by a usually reliable person to share something.</li> <li>Children have clear ideas about good passwords.</li> <li>Children can see how they can use images and digital technology to create effects not possible without technology.</li> <li>Children have experienced how image manipulation could be used to upset them or others even using simple, freely available tools and little specialist knowledge.</li> </ul>
3	Citing Sources	<ul style="list-style-type: none"> <li>To learn about how to reference sources in their work.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Children can cite all sources when researching and explain the importance of this.</li> <li>Children select keywords and search techniques to find relevant information and increase reliability.</li> </ul>
4	Reliability	<ul style="list-style-type: none"> <li>Ensuring reliability through using different methods of communication.</li> </ul>	<ul style="list-style-type: none"> <li>Children show an understanding of the advantages and disadvantages of different forms</li> </ul>

			of communication and when it is appropriate to use each.
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## Unit 5.3 – Spreadsheets

Lesson	Title	Aims (Objectives)	Success Criteria
1	Conversions of Measurements	<ul style="list-style-type: none"> <li>To use formulae within a spreadsheet to convert measurements of length and distance.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create a formula in a spreadsheet to convert m to cm.</li> <li>Children can apply this to creating a spreadsheet that converts miles to km and vice versa.</li> </ul>
2	The Count Tool	<ul style="list-style-type: none"> <li>To use the count tool to answer hypotheses about common letters in use.</li> </ul>	<ul style="list-style-type: none"> <li>Children can use a spreadsheet to work out which letters appear most often.</li> <li>Children can use the 'how many' tool.</li> </ul>
3	Formulae Including the Advanced Mode	<ul style="list-style-type: none"> <li>To use a spreadsheet to model a real-life problem.</li> <li>To use formulae to calculate area and perimeter of shapes.</li> </ul>	<ul style="list-style-type: none"> <li>Children can use a spreadsheet to work out the area and perimeter of rectangles.</li> <li>Children can use these calculations to solve a real-life problem.</li> </ul>
4	Using Text Variables to Perform Calculations	<ul style="list-style-type: none"> <li>To create formulae that use text variables.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create simple formulae that use different variables.</li> <li>Children can create a formula that will work out how many days there are in x number of weeks or years.</li> </ul>
5	Event Planning with a Spreadsheet	<ul style="list-style-type: none"> <li>To use a spreadsheet to help plan a school cake sale.</li> </ul>	<ul style="list-style-type: none"> <li>Children can use a spreadsheet to model a real-life situation and come up with solutions that can be practically applied.</li> </ul>

# Spring

## Unit 5.4 – Databases

Lesson	Title	Aims (Objectives)	Success Criteria
1	Searching a Database	<ul style="list-style-type: none"> <li>To learn how to search for information in a database.</li> </ul>	<ul style="list-style-type: none"> <li>Children understand the different ways to search a database.</li> <li>Children can search a database to answer questions correctly.</li> </ul>
2	Creating a Class Database	<ul style="list-style-type: none"> <li>To contribute to a class database.</li> </ul>	<ul style="list-style-type: none"> <li>Children can design an avatar for a class database.</li> <li>Children can successfully enter information into a class database.</li> </ul>
3 & 4	Creating a Topic Database	<ul style="list-style-type: none"> <li>To create a database around a chosen topic.</li> </ul>	<ul style="list-style-type: none"> <li>Children can create their own database on a chosen topic.</li> <li>Children can add records to their database.</li> <li>Children know what a database field is and can correctly add field information.</li> <li>Children understand how to word questions so that they can be effectively answered using a search of their database.</li> </ul>

## Unit 5.5 – Game Creator

Lesson	Title	Aims (Objectives)	Success Criteria
1	Setting the scene.	<ul style="list-style-type: none"> <li>To Introduce the 2DIY 3D tool.</li> <li>To begin planning a game.</li> </ul>	<ul style="list-style-type: none"> <li>Children can review and analyse a computer game.</li> <li>Children can describe some of the elements that make a successful game.</li> <li>Children can begin the process of designing their own game.</li> </ul>
2	Creating the Game Environment	<ul style="list-style-type: none"> <li>To design the game environment.</li> </ul>	<ul style="list-style-type: none"> <li>Children can design the setting for their game so that it fits with the selected theme.</li> <li>Children can upload images or use the drawing tools to create the walls, floor, and roof.</li> </ul>

3	The Game Quest	<ul style="list-style-type: none"><li>• To design the game quest to make it a playable game.</li></ul>	<ul style="list-style-type: none"><li>• Children can design characters for their game.</li><li>• Children can decide upon, and change, the animations and</li></ul>
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			sounds that the characters make.
4	Finishing and Sharing	<ul style="list-style-type: none"> <li>To finish and share the game.</li> </ul>	<ul style="list-style-type: none"> <li>Children can make their game more unique by selecting the appropriate options to maximise the playability.</li> <li>Children can write informative instructions for their game so that other people can play it.</li> </ul>
5	Evaluation	<ul style="list-style-type: none"> <li>To self- and peer-evaluate.</li> <li></li> </ul>	<ul style="list-style-type: none"> <li>Children can evaluate my their own and peers' games to help improve their design for the future.</li> </ul>

## Unit 5.6 – 3D Modelling

Lesson	Title	Aims (Objectives)	Success Criteria
1	Introducing 2Design and Make	<ul style="list-style-type: none"> <li>To be introduced to the 2Design and Make tool.</li> </ul>	<ul style="list-style-type: none"> <li>Children know what the 2Design and Make tool is for.</li> <li>Children can explore the different viewpoints in 2Design and Make whilst designing a building.</li> </ul>
2	Moving Points	<ul style="list-style-type: none"> <li>To explore the effect of moving points when designing.</li> </ul>	<ul style="list-style-type: none"> <li>Children can adapt one of the vehicle models by moving the points to alter the shape of the vehicle while still maintaining its form.</li> </ul>
3	Designing for a Purpose	<ul style="list-style-type: none"> <li>To design a 3D model to fit certain criteria.</li> </ul>	<ul style="list-style-type: none"> <li>Children can explore how to edit the polygon 3D models to design a 3D model for a purpose.</li> </ul>
4	Printing and Making	<ul style="list-style-type: none"> <li>To refine and print a model.</li> </ul>	<ul style="list-style-type: none"> <li>Children can refine one of their designs to prepare it for printing.</li> <li>Children can print their design as a 2D net and then created a 3D model.</li> <li>Children can explore the possibilities of 3D printing.</li> </ul>

# Summer

## Unit 5.7 – Concept Maps

Lesson	Title	Aims (Objectives)	Success Criteria
1	Introduction to Concept Mapping	<ul style="list-style-type: none"><li>• To understand the need for visual representation when generating and discussing complex ideas.</li><li>• To understand the uses of a 'concept map'.</li></ul>	<ul style="list-style-type: none"><li>• Children can make connections between thoughts and ideas.</li><li>• Children can see the importance of recording concept maps visually.</li></ul>
2	Using 2Connect	<ul style="list-style-type: none"><li>• To understand and use the correct vocabulary when creating a concept map.</li><li>• To create a concept map.</li></ul>	<ul style="list-style-type: none"><li>• Children understand what is meant by 'concept maps', 'stage', 'nodes' and 'connections.'</li><li>• Children can create a basic concept map.</li></ul>
3	2Connect Story Mode	<ul style="list-style-type: none"><li>• To understand how a concept map can be used to retell stories and information.</li></ul>	<ul style="list-style-type: none"><li>• Children have used 2Connect Story Mode to create an informative text.</li></ul>
4	Collaborative Concept Maps	<ul style="list-style-type: none"><li>• To create a collaborative concept map and present this to an audience.</li></ul>	<ul style="list-style-type: none"><li>• Children have used 2Connect collaboratively to create a concept map.</li><li>• Children have used Presentation Mode to present their concept maps to an audience.</li></ul>



## Unit 5.8 – Word Processing (with Microsoft Word)

Lesson	Title	Aims (Objectives)	Success Criteria
1	Making a Document from a Blank Page	<ul style="list-style-type: none"> <li>To know what a word processing tool is for.</li> </ul>	<ul style="list-style-type: none"> <li>Children know what a word processing tool is for.</li> <li>Children will be able to create a word processing document altering the look of the text and navigating around the document.</li> </ul>
2	Inserting Images: Considering Copyright	<ul style="list-style-type: none"> <li>To add and edit images to a word document.</li> </ul>	<ul style="list-style-type: none"> <li>Children know how to add images to a word document.</li> <li>Children can edit images to reduce their file size.</li> <li>Children know the correct way to search for images that they are permitted to reuse.</li> <li>Children know how to attribute the original artist of an image.</li> </ul>
3	Editing Images in Word	<ul style="list-style-type: none"> <li>To know how to use word wrap with images and text.</li> </ul>	<ul style="list-style-type: none"> <li>Children can edit their images within Word to best present them alongside text.</li> <li>Children understand wrapping of images and text.</li> </ul>
4	Adding the Text	<ul style="list-style-type: none"> <li>To change the look of text within a document.</li> </ul>	<ul style="list-style-type: none"> <li>Children can add appropriate text to their document, formatting in a suitable way.</li> <li>Children can use a style set in Word.</li> <li>Children can use bullet points and numbering.</li> </ul>
5	Finishing Touches	<ul style="list-style-type: none"> <li>To add features to a document to enhance its look and usability.</li> </ul>	<ul style="list-style-type: none"> <li>Children can add text boxes and shapes.</li> <li>Children can consider paragraph formatting such as line spacing, drop capitals.</li> <li>Children can add hyperlinks to an external website.</li> <li>Children can add an automated contents page.</li> </ul>
6	Presenting Information Using Tables	<ul style="list-style-type: none"> <li>To use tables within MS Word to present information.</li> </ul>	<ul style="list-style-type: none"> <li>Children can add tables to present information.</li> <li>Children can edit properties of tables including borders, colours, merging cells, adding and removing rows and columns.</li> <li>Children can add word art for a heading.</li> </ul>
7	Writing a Letter Using a Template	<ul style="list-style-type: none"> <li>To introduce children to templates.</li> </ul>	<ul style="list-style-type: none"> <li>Children can use a Word template and edit it appropriately.</li> </ul>

8	Presenting Information - Newspaper	<ul style="list-style-type: none"><li>• To consider page layout including heading and columns.</li></ul>	<ul style="list-style-type: none"><li>• Children can format a page using a combination of images, headers and columns.</li></ul>
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