

# Year 6: Computing



Predominant Area of Computing*		
	Computer Science	
	Information Technology	Digital Literacy

\*Most units will include aspects of all strands.

## Autumn Term –

### 6.1 - Coding, 6.2 Online Safety, 6.3 - Spreadsheets

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
<p><b>6.1 - Coding:</b> In this unit pupils will take the skills from year 5 on to make a more complex game. Pupils will use different input controls and commands to vary gameplay and produce a much more explorable environment.</p>	<ul style="list-style-type: none"> <li>Know that complex user input can be used to vary game outcomes and character control.</li> <li>Know that functions must be 'called' in order to be active and affect outcomes.</li> <li>Understand the link between simulations, 3D Modelling and coding games.</li> </ul>	<ul style="list-style-type: none"> <li>Know how to add a timer and a score to a game.</li> <li>Debug programs.</li> <li>Know how to make use of Functions.</li> <li>Be creative in the effects used.</li> <li>Know how to attribute variables to an input.</li> <li>Code all possibilities when creating an input.</li> <li>Develop and adapt the game using the variable options.</li> </ul>
<p><b>6.2 - Online Safety:</b> Pupils develop their understanding further in this unit, looking into the risks and benefits of what is posted online. They reflect on newer technologies including geographical positioning and location access. They will consider the impact of the digital footprint, looking at an example situation where people are applying for work in a company that researches their social media to judge candidacy.</p>	<ul style="list-style-type: none"> <li>Know that our digital footprint can have both positive and negative impact on us. Be able to give examples.</li> <li>Be aware of our social contract with others when using social media.</li> <li>Know the risks of too much screen time physically and mentally.</li> <li>Know the more advanced signs and symbols out on films, games and online content, reflecting on the judgement and choices we make about them.</li> </ul>	<ul style="list-style-type: none"> <li>Know the security and age awareness symbols used on various online or on-screen content.</li> <li>Explore a database of research taken from online about candidates for a job.</li> <li>Review what that information says about those people and know how this affects decisions.</li> <li>Know our own screen time usage and reflect on how much time we spend online.</li> <li>Know the impact of excessive screen time.</li> </ul>
<p><b>6.3 - Spreadsheets: (Bespoke)</b> In this unit students will look at an industry standard software package, (Microsoft Excel) to create a calculator that will price a school trip. They will use research from a variety of technologies to find prices, create complex calculators that will find the best prices for customers, and will use this information to provide a final price to the customer.</p>	<ul style="list-style-type: none"> <li>Understand how spreadsheets can support complex financial models.</li> <li>Know how to develop a complex spreadsheet to carry out calculations.</li> <li>Understand the term 'industry standard' and identify common features of similar software packages.</li> <li>Use mixed technologies to solve problems.</li> </ul>	<ul style="list-style-type: none"> <li>Pupils revise prior skills.</li> <li>Learn the interface of Excel.</li> <li>Identify core features of the software packages.</li> <li>Know how to write and apply formulae</li> <li>Know how to rapidly apply formulae.</li> <li>Know how to autosum;</li> <li>Know how to relate columns in order to make multiple calculations combine.</li> <li>Know how to work out the cost per person of a school trip involving both ticket entry prices and a share of coach costs.</li> </ul>

## Spring Term -

### 6.4 - Blogging, 6.5 - Text adventures, 6.6 - Networks

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
<p><b>6.4 - Blogging:</b> During this unit pupils use skills they have learned about word processing, developing online content and E-</p>	<ul style="list-style-type: none"> <li>Understand the concept of blogging and why people blog.</li> <li>Recognise the role of blogging in the world of social media, news and sharing data globally.</li> </ul>	<ul style="list-style-type: none"> <li>Know the key features of a Blog.</li> <li>Be familiar with a range of tools and blogging software.</li> <li>Recognise how different tools can be used at different stages of</li> </ul>

<p>safety to produce an online blog, working collaboratively on content.</p>	<ul style="list-style-type: none"> <li>• Know that blogging something doesn't make it true, acceptable or accurate.</li> <li>• Reflect on visual presentation of information and how this helps the audience of that information.</li> <li>• Understand the approval process of blogs and their effectiveness. (Reflecting on cyberbullying.)</li> </ul>	<p>blogging. (Camera, word-processor, web editors etc.)</p> <ul style="list-style-type: none"> <li>• Work collaboratively to create a blog or blog post,</li> <li>• Reflect on how the way information is presented has an impact upon the audience.</li> <li>• Assess the effectiveness and appropriateness of blogs and posts.</li> </ul>
<p><b>6.5 - Text Adventures:</b> Pupils have opportunity to develop text-based adventure games, and then to code a map-based text adventure. They look at coding multiple string input endings and options.</p>	<ul style="list-style-type: none"> <li>• Know the procedures to make a 'Choose your own adventure' style adventure story game.</li> <li>• Know how to apply prior skills to develop an in-depth multi-option game process.</li> <li>• Understand how non-sequential gaming works.</li> </ul>	<ul style="list-style-type: none"> <li>• Know what a text adventure is and how it works.</li> <li>• Know how to record ideas with 2Connect</li> <li>• Know how to create and debug a text adventure.</li> <li>• Split adventure parts down in order to create them.</li> <li>• Know how to map out an adventure.</li> <li>• Know how to use if/else type functions to determine outcomes.</li> </ul>
<p><b>6.6 - Networking:</b> In this unit pupils will gain a clear understanding of how the internet works, about LAN and WLAN structures and features, and will learn a little of the history of the internet and the World Wide Web.</p>	<ul style="list-style-type: none"> <li>• Know how basic networking works.</li> <li>• Understand the difference between wired and wireless networks, and how they integrate.</li> <li>• Know some of the history of the creation and development of the internet and how it has impacted modern life, for good and bad.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how the internet and the World Wide Web differ.</li> <li>• Understand the school network and how it integrates with other networks.</li> <li>• Know the different types of LAN</li> <li>• Research technological development of the internet and computer systems.</li> </ul>

**Summer Term –  
6.7 - Quizzing, 6.8 - Understanding Binary**

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
<p><b>6.7 - Quizzing:</b> Extending their use of past skills, the pupils will create a quiz for younger children using the 2DIY software, reflecting on audience needs and a range of input/outputs including pictures supported by a database.</p>	<ul style="list-style-type: none"> <li>• Reflect on age-appropriate content and the difficulties of knowing what is suitable.</li> <li>• Know a range of ways to deliver content.</li> <li>• Know how to test and reflect on your work.</li> </ul>	<ul style="list-style-type: none"> <li>• Know how to use the 2DIY tools to create a quiz.</li> <li>• Consider the audience of the quiz and their capability level.</li> <li>• Reflect on what sorts of questions are appropriate to different users.</li> <li>• Know how to share a quiz, analyse it and adapt it.</li> <li>• Use 2INvestigate to try out quizzes.</li> </ul>
<p><b>6.8 - Understanding Binary:</b> In this final unit the pupils gain an understanding of how electronic devices make use of binary to translate input into output and to make sense of all types of data in digital systems.</p>	<ul style="list-style-type: none"> <li>• Know that Binary is the language of computers and all data and instructions on computers and digital systems are made of binary data.</li> <li>• Know how binary is formed by division of 2.</li> </ul>	<ul style="list-style-type: none"> <li>• Children can explain how all data in a computer is saved in the computer memory in a binary format.</li> <li>• Children can explain that binary uses only the integers 0 and 1.</li> <li>• Children can relate 0 to an 'off' switch and 1 to an 'on' switch. Convert numbers to Binary.</li> </ul>