Year 3: Computing

Predominant Area of Computing*		
Computer Science	Information Technology	Digital Literacy

*Most units will include aspects of all strands.

Blocks 1 & 2 – 3.1 - Coding, 3.2 - Online Safety, 3.3 - Spreadsheets

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
3.1 - coding: Through a range of scaffolded coding tasks pupils will advance on from their understanding in year 2 to introduce new skills in their coding abilities. These include branching commands and repeat commands as well as timers. Pupils have opportunity to build, test and debug a range of programs.	• Pupils develop their understanding of coding, introducing knowledge of how timer delays affect programs and how programs can be halted or set in motion with click events. They continue to develop their debugging skills with a stringer understanding of data flow via flowcharts. • Recognise how skills like flowcharts and nesting with timers can open up possibilities in coding more complex programs.	• Know how to read and explain a flowchart. • Use a flowchart to create a program. • Create a program with click events and timers. • Understand and use timer commands. • Develop a program using the repeat command. • To apply nesting skills to present commands within commands. • Run, test and debug programs.
3.2: Online Safety: In this unit pupils will begin to look at the safety and veracity of knowledge on the internet, particularly through exploring 'spoof' websites. They will will start to understand that not everything on the Internet is true and whilst it is a fantastic resource the children need to ask themselves, is it fact or fiction? They will also understand more about the importance of passwords and keeping them safe.	• Have a good understanding of how passwords are attached to 'identity' and to 'access.' • Know that not all knowledge found on websites is factual or accurate. • Reason about how we can check facts and knowledge and what constitutes a reliable source. • Be discerning in what we recognise to be reliable and what may not be.	• Know how to protect our passwords. • Know what do if a password becomes compromised. • Explore data on sites to check if it is accurate. • Show understanding of PEGI ratings and what constitutes acceptable content. • Identify physical and emotional effects of watching/playing inappropriate content or games.
3.3 - Spreadsheets: In this unit, pupils advance on the skills from year 2 by learning to use other data manipulation options. These include using comparing tools (< = >) and automated graphs, including pie charts and other styles of graphs.	• Know how to manipulate data in a wider range of ways to present data in charts and tables. • Know how to present data in spreadsheets. • Use graphing tools.	• Select ranges of data. • Set cells to automatically graph ranges of data. • Know how to use cell addresses to identify integers to the software

Blocks 3 & 4 - 3.4 - Touch Typing, 3.5 - Email, 3.6 - Branching databases

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
3.4 - Touch Typing: This unit introduces the children to a consistent style of keyboard handling in order to manage typing in a more efficient and speedy style. Pupils learn about common key placements, keyboard layout and multiple keystrokes.	• Understand the layout of the keyboard. • Understand the concepts of 'home' row, 'bottom' and 'top' row.	• Identify and use the 'home,' 'bottom,' and 'top' row keys. • Know the name of the fingers. • Know the 'Left;' and 'Right' hand sets of keys. • Type simple sequences by touch.
3.5 - Email: Pupils learn about E-communications, identifying and using the core skills of sending, receiving and saving emails.	• To understand methods of E-communication. • List different ways to communicate. • Know rules of safer communication. • Know how to use Email safely. • Relate Email to different scenarios.	• Know how to ask for help if receiving unwanted messages. • Know how to open, read and reply to an email. • Send emails to other children in class. • Write rules about safer communication.

		• Attach documents to email.
3.6 - Branching databases: Pupils are introduced to databases, and learn what a branching database is. They create a simple branching database.	• Understand the role of technology in sorting information. • Understand that technology can be used to store and sort information. • To be able to debug a branching database to identify errors and overcome inadequate protocols.	• Use Yes/No questions to structure a database. • Explain choices of question. • Use the branching database software, knowing the options and tools. • Select, save and add images into a branching database on a given topic.
Blocks 5 & 6 – 3.7 - Simulations, 3.8 - graphing, 3.9 - Presenting with powerpoint		
Overview of unit	**Substantive Knowledge**	**Disciplinary Knowledge**
3.7 - Simulations: Children learn what simulations are, exploring simulations and testing effects of different situations through simulations. They have opportunity to evaluate the quality of outcomes of a simulation.	• To understand what a simulation is and what its purpose is. • Know that a computer simulation can represent real or imaginary situations. • Be able to discuss the effects and outcomes of simulations, knowing their worth. • Be able to test ideas through simulations. • Relate simulations to the real world.	• Children can explore a simulation. • Children can use a simulation to try out different options and to test predictions. • Analyse choices made in a simulation. • Identify patterns in simulations. • Make and test predictions. • Evaluate a simulation to determine its usefulness to purpose. • Create simple simulations. (Extension.)
3.8 - Graphing: In this unit pupils will use graphing software to gather discrete data and graph it in different forms. They will reflect on the practicality of the tools, their use in translating and interpreting data, and may make choices in the best forms of graph to use for different uses.	• Recognise the role of computing in handling data, translating data into different forms and presenting data. • Be able to use computing tools to investigate and answer lines of enquiry. • Relate graphing in computing to graphing in practical paper 'maths/science lesson' terms.	• Introduce and learn the '2Graph' software. • Set up a graph with a given number of fields. • Enter data into graphs. • Use graphs to solve a maths investigation. • Present results in a range of formats.
3.9 - Presenting with Powerpoint: Through this unit pupils will learn to make presentations using industry standard software. They will produce a simple presentation using animations to present that information to others.	• Recognise the use of computing in presenting information. • Know how to use a range of presenting tools to present information. • Handle files, documents and images to present information.	• Open and navigate the core tools of the software. • Add text to a page. • Add shapes to a page. • Change the design of slides. • Insert new slides, pictures and know how to edit pictures. • Know how to insert audio / video. • Know how to animate the presentation.