Computing Curriculum Year A and B: Planning, Progress and Long-Term Knowledge Growth

YEAR 3	Substantive Computing Content	Recurring substantive themes, ideas and language (Key Concepts)	Subject rationale: Supporting pupils' wider Computing curriculum journey	Basic Disciplinary Training in Computational Thinking
Autumn Term **3.1 Coding**	**Computer Science:** To review previous coding knowledge. To understand what a flowchart is and how flowcharts are used in computer programming. To understand that there are different types of timers. To be able to select the right type of timer for a purpose. To understand how to use the repeat command. To use coding knowledge to create a range of programs. To understand the importance of nesting. To design and create an interactive scene	This unit on coding will further embed the children's understanding of coding through the creation of flowcharts, repeat commands, timers to produce an interactive scene. Pupils will be secure in computing vocabulary including: **command, action, algorithm, blocks of command , develop, flowchart, nesting, sequence, repeat, timer**	This unit builds upon the children's learning of coding in KS1 and leads into their learning in UKS2	**Algorithm design** **Imagination** **Making mistakes**
3.3 Spreadsheets	**Information Technology** To add and edit data in a table layout. To find out how spreadsheet programs can automatically create graphs from data. To introduce the 'more than', 'less than' and 'equals' tools. To introduce the 'spin' tool and show how it can be used to count through times tables.	In this unit children will use the symbols more than, less than and equal to, to compare values. They will use 2Calculate to collect data and produce a variety of graphs. They will use the advanced mode of 2Calculate to learn about cell references. Throughout this unit links will be made to the maths curriculum. Pupils will be secure in computing vocabulary including:	This unit builds upon the children's learning on spreadsheets in KS1 and leads into their learning in UKS2.	**Abstraction and generalisation**

	To introduce the Advanced mode of 2Calculate. To learn about describing cells using their addresses.	**Greater than. Less than and equal to, columns, cells, rows, spreadsheets, delete**		
3.2 Online Safety	To know what makes a safe password, how to keep passwords safe and the consequences of giving your passwords away. To understand how the Internet can be used to help us to communicate effectively. To understand how a blog can be used to help us communicate with a wider audience. To consider if what can be read on websites is always true. To look at a 'spoof' website. To create a 'spoof' webpage. To think about why these sites might exist and how to check that the information is accurate. To learn about the meaning of age restrictions symbols on digital media and devices. To discuss why PEGI restrictions exist. To know where to turn for help if they see inappropriate content or have inappropriate contact from others.	This unit will embed and deepen the children's awareness of what makes a safe password. They will learn methods for keeping passwords safe and will understand how the Internet can be used in effective communication. They will learn how a blog can be used to communicate with a wider audience and will consider the truth of the content of websites. They will learn about the meaning of age restrictions symbols on digital media and devices. Pupils will be secure in computing vocabulary including: **Password, internet, blog, username, website, spoof website.**	The teaching of 'Online Safety' is embedded throughout the school both in computing lessons and through 'Anti – bullying week' and 'Online Safety' assemblies.	**Imagination Perseverance Collaboration**
Spring Term **3.4 Touch Typing**	**Information Technology** 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 and improve typing for home, bottom, and top rows.	In this unit children will be introduced to typing terminology. They will understand the correct way to sit at the keyboard and learn how to use the home, top and bottom row keys. They will practise typing with the left and right hand.	This unit introduces the children to the skills of 'touch typing' which will form a foundation for learning in UKS2 – 'Writing for different audiences' and 'Blogging'.	**Making mistakes Perseverance**

	To practice the keys typed with the left hand.	Pupils will be secure in computing vocabulary including: **Posture, top row keys, home row keys, bottom row keys, space bar**		
	To practice the keys typed with the right hand.			
3.5 Email	To think about the different methods of communication.	In this unit the children will have the opportunity to think about different methods of communication. They will learn how to open and respond to an email using an address book. They will learn how to use email safely including how to add an attachment to an email. They will be challenged to explore a simulated email scenario. Pupils will be secure in computing vocabulary including: **Communication, email, compose, send, report, attachment, address book, password, cc, save to draft.**	This stand- alone unit links with the 'Online Safety' units that are taught throughout KS1 and 2.	**collaboration**
	To open and respond to an email.			
	To write an email to someone from an address book			
	To learn how to use email safely.			
	To learn how to use email safely			
	To add an attachment to an email.			
	To explore a simulated email scenario			
3.6 Branching Databases	**Information Technology** To sort objects using just YES/NO questions.	This unit of work links to the children's learning in science. They will sort objects using just 'yes' or 'no' questions and will complete a branching database using 2Question. They will learn how to create a branching database of the children's choice. Pupils will be secure in computing vocabulary including: **branching database, database, question, data**	This unit builds on the children's learning in Year 2 'Questioning' and builds the knowledge and skills required for 'Databases' in Year 5.	**Pattern recognition** **Making mistakes** **Perseverance**
	To complete a branching database using 2Question.			
	To create a branching database of the children's choice			
Summer Term **3.7 Simulations**	**Information Technology** To find out what a simulation is and understand the purpose of simulations.	In this unit children will consider what simulations are. They will explore a simulation and analyse and evaluate a simulation. Pupils will be secure in computing vocabulary including: **simulation**	This is a stand –alone unit that utilises skills taught previously and enables the children to work creatively further on in their learning.	**Making mistakes** **Imagination** **Decomposition** **Collaboration**
	To explore a simulation, making choices and discussing their effects.			
	To work through and evaluate a more complex simulation.			

3.8 Graphing **3.9 Presenting**	**Information Technology** To enter data into a graph and answer questions. To solve an investigation and present the results in graphic form	In this unit children will learn to enter data into a graph and answer questions. They will carry out and solve an investigation and present the results in graphic form. Pupils will be secure in computing vocabulary including: **Graph, bar chart, row, column, field, data, block graph, pie chart, line graph**	This is a stand –alone unit that utilises skills taught previously and links to the maths curriculum – statistics strand.	**Making mistakes Pattern recognition Abstraction and generalisation**
	Information Technology To create a page in a presentation. To add media to a presentation To add shapes and lines to a presentation. To add animations into a presentation • To use the skills learnt in previous weeks to design and present an effective presentation.	In this unit children will understand the uses of PowerPoint. They will create a page in a presentation and add media to it. They will add animations and timings to a presentation. Children will use the skills learnt to design and create an engaging presentation. Pupils will be secure in computing vocabulary including: **animation, media, audio, text box, presentation, slideshow, transition, font, slide**	This unit builds upon learning from Year 2 'Presenting Ideas' and makes links to the art curriculum.	**Imagination Pattern recognition Making mistakes Perseverance**

National Curriculum Objective	Strand	Units
Design, write and debug programs that accomplish specific goals, including controlling or simulating physical systems; solve problems by decomposing them into smaller parts.	Computer Science	3.1
Use sequence, selection and repetition in programs; work with variables and various forms of input and output.	Computer Science	3.1
Use logical reasoning to explain how some simple algorithms work and to detect and correct errors in algorithms and programs	Computer Science	3.1
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.	Computer Science	3.5
Use search technologies effectively, appreciate how results are selected and ranked, and be discerning in evaluating digital content.	Information Technology	
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.	Information Technology	3.3 3.4 3.5 3.6 3.7 3.8 3.9
Use technology safely, respectfully and responsibly; recognise acceptable/unacceptable behaviour; identify a range of ways to report concerns about content and contact.	Digital Literacy	3.2 3.5 3.9