INTENT

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

YEAR 1	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 **1.1 Online safety** **1.2 Grouping and sorting** **1.9 Tech outside the classroom** **1.3 Pictograms**	**Computer Science:** To sort items using a range of criteria. To sort items on the computer using the 'Grouping' activities in Purple Mash. To understand the functionality of the direction keys. To understand how to create and debug a set of instructions (algorithm) To use the additional direction keys as part of an algorithm To understand how to change and extend the algorithm list To create a longer algorithm for an activity. To set challenges for peers. To access peer challenges set by the teacher as 2Dos.	The unit on grouping and sorting will be taught alongside maths and science work around sorting and will be used to secure the children understanding of how to sort objects by different criteria. The unit on 'maze explorers' will secure children knowledge of a program that allows you to move an object around the screen using either the arrows or by creating a simple sequence of instructions. The children will be confident in how to 'undo' a mistake in their instructions. Pupils will be secure in key vocabulary including e.g. **sort, criteria. Direction, challenge, arrow, undo, forward, backwards, left turn, right turn, rewind, debug, instruction, algorithm.**	To build on prior learning in the EYFS This will support future learning in lower KS2 as children will start to understand how to use the repeat command. To understand the importance of nesting. To design and create an interactive scene. Then in upper KS2 children will embed their prior knowledge when they use the '2Code' programme to make a text-adventure game, to find out and explore what a text adventure is.	Attitudes and Skills: Making mistakes, perseverance, collaboration, pattern recognition, decomposition and algorithm design.
1.5 Maze explorers	**Information Technology:** To understand that data can be represented in picture format. To contribute to a class pictogram. To use a pictogram to record the results of an experiment.	This unit is an introduction to pictograms and will teach children about how pictograms can be used to represent data. Pupils will be secure in key vocabulary including e.g **Pictogram, data, collate**	To build on prior learning in the EYFS This will support future learning in lower KS2 as children will use their knowledge of pictograms to use '2calculate' to collect data and produce a variety of graphs and to learn about cells. Then in upper KS2 children will then use their knowledge of collecting data and making graphs by	Attitudes and Skills: Making mistakes, perseverance, collaboration, pattern recognition and decomposition

			producing spreadsheets and introducing basic formulae.	
	Digital Literacy (Online Safety): To log in safely To learn how to open and save. To learn how to find saved work in the Online Work area To become familiar with the icons and types of resources available in the Topics section To learn how to search Purple Mash to find resources. To explore the Tools and Games section of Purple Mash. To understand the importance of logging out. To walk around the local community and find examples of where technology is used and record examples of technology outside school.	The unit of work on online safety will teach the children about how to keep themselves safe online and what a digital avatar is, why it is important to keep their password safe and how their work is stored. The unit on technology outside the classroom will teach the children about how technology has made life easier in many areas. Pupils will be secure in their knowledge of the use of technology to invent new devices and tools. Pupils will be secure in key vocabulary including e.g. **log in, avatar, log out, save, username, notification, password, topics, tools, technology**	As a whole school children will develop and embed their knowledge of online safety through Anti bullying week and termly online safety assemblies**.** To build on prior learning in the EYFS This will support future learning in lower KS2 as children will use their knowledge and skills of online safety when they produce a blog which can communicate with a wider audience. Then in upper KS2 children will identify how to keep themselves safe online by identifying the positive and negative influences of technology on health and the environment.	Attitudes and Skills: Making mistakes, perseverance, collaboration
Spring Term **1.7 Coding** **1.8 Spreadsheets**	**Computer Science:** To understand what instructions are and predict what might happen when they are followed. To use code to make a computer program. To understand what object and actions are. To understand what an event is. To use an event to control an object.	The unit of work on coding will develop the children's knowledge and understanding of what coding is, why it is useful to design before coding And how you can make characters move in a coding program. Pupils will be secure in key vocabulary including e.g. **action, code, event, algorithm, command, execute, debug, input, background, instructions, output, objects, run, properties, scale, scene, sound.**	To build on prior learning in the EYFS This will support future learning in lower KS2 as children will use their knowledge and skills to further develop their understanding of how to use the repeat command. To understand the importance of nesting. Then in upper KS2 children will use written plans to code a map based adventure in the '2code' programme. Which builds on	Attitudes and Skills: Making mistakes, perseverance, collaboration, pattern recognition, decomposition and algorithm design.

	To begin to understand how code executes when a program is run. To understand what backgrounds and objects are To plan and make a computer program.		children's prior learning of planning and making a computer programme in year one.	
	Information Technology: To know what a spreadsheet program looks like. To locate 2Calculate in Purple Mash. To enter data into spreadsheet cells. To use 2Calculate image tools to add clipart to cells. To use 2Calculate control tools: lock, move cell, speak and count.	The unit of work on spreadsheets will introduce the children to what a spreadsheet is, what it looks like, how you can use it to add up values and how you can use the speak and count tools within the program. Pupils will be secure in key vocabulary including e.g**. spreadsheet, cursor, columns, rows, cells, arrow keys, backspace keys, clipart, count tool, delete key, image toolbox, lock tool, move cell tool, speak tool.**	To build on prior learning in the EYFS This will support future learning in lower KS2 as children will use their knowledge and skills to further develop their understanding of how to use data this time by using '2Question'. To create a branching database of the children's choice. This also links to the upper KS2 learning as children begin to navigate and enter data into cells. To introduce some basic data formulae for percentages, averages and max and min numbers. To demonstrate how the use of spreadsheets can save time and effort when performing calculations.	Attitudes and Skills: Making mistakes, perseverance, collaboration and imagination.
	Digital Literacy (Online Safety): Safer internet day – How to show respect online and have safe online relationships**.**	Safer Internet Day will further embed knowledge of online safety and children can keep themselves safe online.	As a whole school children will develop and embed their knowledge of online safety through Safer Internet Day and termly online safety assemblies. This is will also link to future learning as children in lower KS2 will build on what they already know about how to keep safe online and consider the truth of the content of websites and the meaning of age restriction symbols. Then in upper KS2 children will learn about the	Attitudes and Skills: Making mistakes, perseverance, collaboration

			importance of balancing game and screen time with other parts of their lives. As well as learning ways to identify the positive and negative influences of technology and the risks of giving personal information.	
Summer Term **1.1 Online safety** **1.4 Lego builders** **1.6 Animates story books**	**Computer Science:** To compare the effects of adhering strictly to instructions to completing tasks without complete instructions. To follow and create simple instructions on the computer. To consider how the order of instructions affects the result	The unit of work on Lego builders will secure children's knowledge of what an instruction is and why we need to follow tasks step by step to successfully complete a task. The children will be confident in what debugging is. Pupils will be secure in key vocabulary including e.g **Instruction, algorithum, computer, program, debug**	To build on prior learning in the EYFS This will support future learning in lower KS2 as children will use their prior knowledge and skills to design and create an interactive scene. Year 1 learning also links to learning in upper KS2 as children will be taught how to use 2Connect to plan a story adventure. To make a story-based adventure using 2Create a Story.	Attitudes and Skills: Making mistakes, perseverance, collaboration, pattern recognition, decomposition and algorithm design.
	Information Technology: To introduce e-books and the 2Create a Story tool. To add animation to a story. To add sound to a story, including voice recording and music the children have composed. To work on a more complex story, including adding backgrounds and copying and pasting pages To share e-books on a class display board.	The unit of work on animate stories will be taught alongside English work on writing our own stories through Talk 4 writing. The children will be secure in their knowledge of what an animated story is, how to create and improve their own e-books using 2Create a story including animated pages, sounds, narration and music. Pupils will be secure in key vocabulary including e.g **ebook, animation, font, file, sound effect**,	To build on prior learning in the EYFS This will support future learning in lower KS2 as children will use their prior knowledge and skills to use their animation skills this time to animate a presentation as well as add timings. To use the skills learnt to design and create an engaging presentation. Then in upper KS2 children will use their skills of copying and pasting and other more complex skills to write a blog and understand how to structure it.	Attitudes and Skills: Making mistakes, perseverance, collaboration and imagination.
	Digital Literacy (Online Safety): To log in safely		As a whole school children will develop and embed their knowledge	Attitudes and Skills:

	To learn how to open, save and print. To learn how to find saved work in the Online Work area and find teacher comments To start to add pictures and text to work. To understand the importance of logging out.	The unit of work on online safety will teach the children about how to keep themselves safe online, as well as how to save, access and print their work. Pupils will be secure in key vocabulary including e.g. **log in, log out, save, username, notification, password**	of online safety termly online safety assemblies. This is will also link to future learning as children in lower KS2 will build on what they already know about how to keep safe online and consider the truth of the content of websites and the meaning of age restriction symbols. Then in upper KS2 children will learn about the importance of balancing game and screen time with other parts of their lives. As well as learning ways to identify the positive and negative influences of technology and the risks of giving personal information.	Making mistakes, perseverance, collaboration

National Curriculum Objective	Strand	Unit
Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	Computer Science	1.2 1.4 1.5 1.7
Create and debug simple programs	Computer Science	1.5 1.7
Use logical reasoning to predict the behaviour of simple programs.	Computer Science	1.5 1.7
Use technology purposefully to create, organise, store, manipulate and retrieve digital content	Information Technology	1.3 1.6 1.7 1.8
Recognise common uses of information technology beyond school	Digital Literacy	1.9
Use technology safely and respectfully, keeping personal information private; identify where to go for help and support when they have concerns about content or contact on the internet or other online technologies.	Digital Literacy	1.1