Year 1: Computing

Predominant Area of Computing*		
Computer Science	Information Technology	Digital Literacy

*Most units will include aspects of all strands.

Blocks 1 & 2 – 1.1 - Online Safety, 1.2 - Grouping and sorting, 1.3 - Pictograms

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
1.1 - Online safety: Pupils will learn how to log in safely to their work area and learn to familiarise themselves with the Purple Mash workspace and how to navigate it.	• To start to understand the idea of 'ownership' of their creative work. • To begin to understand the idea that when we log in, we are keeping our information separate to other people. • be able to demonstrate an understanding of the reasons for keeping their password private including talking about the meaning of 'private information' • Pupils understand the importance of logging out safely.	• Pupils can log in and out safely. • Pupils can save work into the My Work folder in Purple Mash and understand that this is a private saving space just for their work. • Pupils create and understand an avatar. • Pupils can save their work in their work area.
1.2 - Grouping and sorting: In this unit, the children will sort items by different criteria away from the computer. At the computer, they will use Grouping on Purple Mash to sort items.	• Pupils understand the concept of sorting and organising information. • Pupils can relate this understanding to other fields such as maths. • Pupils begin to recognise how computing tools can help with organising and sorting.	• To sort items using a range of criteria. • To sort items on the computer using the 'Grouping' activities in Purple Mash.
1.3 - Pictograms: This unit is an introduction to pictograms and looking at how they can be used to represent data. This unit can be adapted to fit in with maths or science teaching, rather than being taught discretely.	• Pupils understand that data can be represented in picture format. • Pupils begin to understand how computers and technology can help sort, manage and represent data.	• Contribute to a whole class pictogram. • Use a pictogram to record the results of an experiment. • Know the basic tools for inputting data. • Understand the visual output of data.

Blocks 3 & 4 – 1.4 - Lego Builders, 1.5 - Maze explorers, 1.6 - Animated story books

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
1.4 - Lego Builders: This unit encourages children to begin to think logically about scenarios. Children will be introduced to the term 'algorithm'. This concept is at the core of coding. The next unit (Maze Explorers),	• Understand the importance of following instructions. • Understand that an algorithm is a precise, step-by-step set of instructions. • Know that that an algorithm written for a computer is called a 'program.'	• Follow simple instructions. • Follow instructions on a computer program. • Know how to create simple instructions. • Know how to sequence simple instructions.

builds upon this, linking logical thought processes to the way that computers are programmed.	• Understand that the order of steps is important to accurate instructions and outcomes. • Begin to understand the term 'debugging' for correcting an algorithm.	• Test sets of instructions. • Know how to work out what is or is not working and why.
1.5 - Maze explorers: In this unit pupils apply the concepts from the lego builder's unit to direction, allowing them to build, test and debug instructions for escaping a maze. This unit can involve of fline tools including bee-bots.	• Create and debug simple programs. • Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions. • Use logical reasoning to predict the behaviour of simple programs.	• Know how direction keys work. • Know different terms for directions. • Know how to create a simple algorithm. • Know how to test and debug algorithms.
1.6 - Animated story books: The series of lessons will provide an opportunity for the children to develop the skills to create, organise, store, manipulate and retrieve digital content through the creation of their own animated story book.	• Use technology purposefully to create, organise, store, manipulate and retrieve digital content. • Understand the difference between traditional and e-books • To be able to use core tools for saving, retrieving and adapting pages • Use drawing tools to illustrate work. • Begin to be discerning in choices of developing a document.	• Know how to load, save, retrieve and store work. • Know the use of a range of drawing tools. • Know how to add sound or music to a page. • Know how to change the size and style of fonts.

Blocks 5 & 6 –
1.7 - Coding, 1.8 Spreadsheets, 1.9 Technology outside of school

Overview of unit	Substantive Knowledge	Disciplinary Knowledge
1.7 - Coding: This first unit on coding assumes no prior coding knowledge and will teach children to use coding blocks to develop a program.	• Understand what algorithms are; how they are implemented as programs on digital devices; and that programs execute by following precise and unambiguous instructions.	• Draw symbols to represent instructions. • Understand the use of code blocks and arrange code blocks to create a set of instructions. • Use event, object and action code blocks. • Test, debug and edit sets of instructions.
1.8 - Spreadsheets: In this unit pupils are introduced to spreadsheets for the first time, using the purple map 2calculate tool, and learn some of the basic uses of spreadsheets, including managing cells and data.	• Know the vocabulary of spreadsheets. • Understand how a spreadsheet can store, sort and manage data. • Know how tools in a spreadsheet can count data for us.	• Know the vocabulary of spreadsheets. • Know what columns and rows are. • Know how to save and open sheets. • Know how to move cells around a sheet.
1.9 - Technology outside of school: This unit encourages the children to consider how technology is used outside of the school environment. To help do this, the children go on a walk around their local community.	• Know what is meant by 'technology.' • Consider types of technology used inside and outside school.	• Children can relate what 'technology' means. • They can record at least 4 examples of 'modern' technology. • They can differentiate between 'modern' technology - i.e. a microwave, and other technology – like a chair.