Computing Medium Term Planning

Term: Spring 1	Year: 4/5	Topic/Unit: 3.3 Spreadsheets

Key Vocabulary

Lesson 1- Data, Spreadsheet, Row, Column, Cell, Select, Data Table, Graph, Data, Bar Graph, Pie Chart

Lesson 2- Spreadsheet, Row, Column, Cell, Select, Advanced Mode, Cell Address, Quiz Tool

Lesson 3- Row, Column, Cell, Select, Advanced Mode, Cell Address, Formula Bar, Formula Wizard, Spin Tool

Lesson 4- Row, Column, Cell, Select, Formula Wizard, Spin Tool, Random number tool, Timer tool, Equal to tool

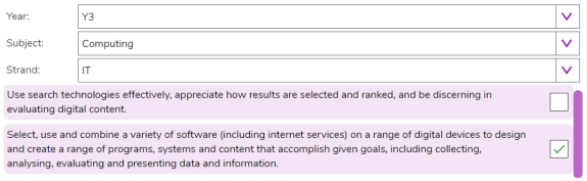
Lesson 5- Row, Column, Cell, Select, Chart, Data, Data table, Line Graph

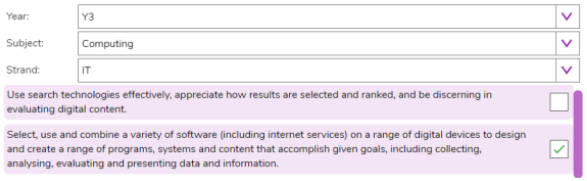
Lesson 6- Calculation, Formula, Currency, Budget, Range

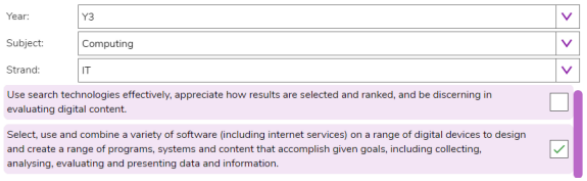
Please upload Computing evidence for each lesson onto Onedrive for Mrs Weston to monitor. (Curriculum > Computing > Computing Evidence.)

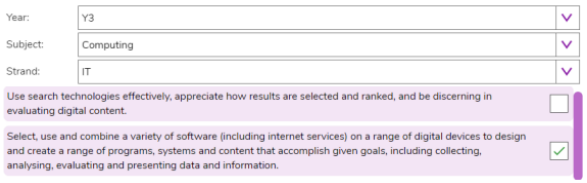
Teacher Videos are located for each lesson on Purple Mash to support you with each lesson.

National Curriculum	Week	NC Coverage	Skills taught	Knowledge	Activity Outline
• 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.	1 Unit 3.3 Lesson 1 Creating Pie Charts and Bar Graphs	• 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	• To recap spreadsheet terms and purposes. • To add and edit data in a table layout. • To find out how spreadsheet	• Children can use the correct terminology for a spreadsheet program. • Children can create a table of data on a spreadsheet. • Children can use a spreadsheet program to automatically create charts and graphs from data.	*Preparation:* **Set 2Calculate as a 2Do for the class.** In advance of the lesson, decide what data to use with the class and how you organise data collection (see slide 10) (collect example data if you wish to use already collected data) edit this slide to adapt it to the data you wish the children to collect.

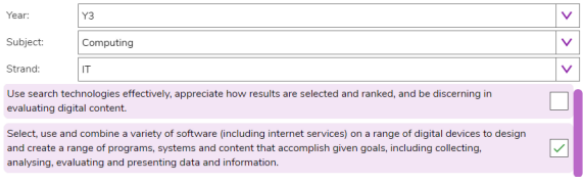
		accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	programs can automatically create graphs from data.		Select the following objectives:  Lesson: Display and outline the lesson aims and success criteria. Discuss vocabulary that has been used previously and introduce the new vocabulary. (Highlighted in yellow.) <u>Activity 1: Make a data table</u> In advance of the lesson, edit this slide to adapt it to the data you wish the children to collect. <u>Activity 2: Creating Charts</u> Support children in creating charts. The icon for line graphs is shown as it is on 2Calculate, but it is not part of the teaching for this lesson. Children could use the notes tool (post it note icon) to type what the graphs show. Remind children to save. <u>Activity 3: Changing Data</u> Encourage children to reflect upon the ease of changing data compared to a hand drawn graph. Review the vocabulary at the end of the lesson. Can the children define the vocabulary used in today's lesson?
	2 Unit 3.3	• Select, use and combine a variety of software (including internet	• To introduce the Advanced mode of 2Calculate.	• Children can describe a cell location in a spreadsheet using the	*<u>Preparation:</u>* **Set Cell Pictures and Treasure Map as 2Dos** for the class.

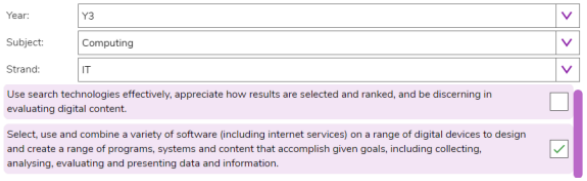
	Lesson 2 Cell Addresses	services) on a range of digital devices to design and create a range of programs, systems and content that accomplish given goals, including collecting, analysing, evaluating and presenting data and information.	• To learn about describing cells using their addresses.	notation of a letter for the column followed by a number for the row. • Children can find specified locations in a spreadsheet.	Select the following objectives:  Lesson: Display and outline the lesson aims and success criteria. Discuss vocabulary that has been used previously and introduce the new vocabulary. (Highlighted in yellow.) Advanced Mode – Launch a blank spread sheet (Launcher top right of slide 5). Click on a few cells to demonstrate cell addresses. Ask children to click on specific cells on the whiteboard. <u>Activity 1: Creating a Picture</u> Complete the activity on the Cell Address example spreadsheet as a class. Children should complete the Cell Picture sheet by opening from their 2Dos. <u>Activity 2: Treasure Maps</u> Children should open Treasure Map from their 2Dos. They must enter the correct cell locations for items on the map. Review the vocabulary at the end of the lesson. Can the children define the vocabulary used in today's lesson?
	3 Unit 3.3	• Select, use and combine a variety of software (including internet	• To learn about the formula wizard	• Children can follow the steps of the formula wizard to perform calculations.	*<u>Preparation:</u>* **Set Wizard Starter, Formula Bar Starter and Spin Tool (Extension) as 2Dos for the class.**

	Lesson 3 The Formula Bar	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.	in 2Calculate Advanced mode. • To learn about the formula bar in 2Calculate Advanced mode. • To use formulae to complete calculations.	• Children can enter formulae into the formulae bar. • Children can create formulae to complete calculations	Select the following objectives:  Lesson: Display and outline the lesson aims and success criteria. Discuss vocabulary that has been used previously and introduce the new vocabulary. (Highlighted in yellow.) Advanced Mode - Launch a blank spread sheet (launcher top right of slide 5) to demonstrate. Draw children's attention to the way that calculations are done in simple mode using the number pad to display and answer the calculation. The answer to the last question is that a screen pops up called content assist which will mean nothing to the children at present. Click to reveal the formula bar and formula wizard areas in advanced mode. For the steps in this lesson choose whether you wish children to try out each tool as it is demonstrated or if you wish to demonstrate for the class. If children are to try each step, they should open 2Calculate in Advanced mode on their devices and try out each step as you go by creating their own example sheets The Formula Wizard - Discuss how the word 'total' indicates an addition sum, so cell C2 should say 22. Click on the linked file (Slide 8) to demonstrate. Discuss how the word 'total' indicates an addition sum, so cell C2 should say 22. Ensure that children notice how the total updates.

					Activity 1: Using the Wizard Support children in completing the spreadsheet. **The Formula Bar - Demonstrate using the tools in 2Calculate, children could follow along on their own devices.** Activity 2: Using the Formula Bar Explain that formulae is the plural of formula. Extension: The Spin tool and Formulae Identify when we change the spinning tool that all numbers change in column (b) by a value of 1. Review the vocabulary at the end of the lesson. Can the children define the vocabulary used in today's lesson?
	4 Unit 3.3 Lesson 4 Using and combining tools in 2Calculate	• 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	• To explore how tools can be combined to use 2Calculate to make number games. • To explore the use of the timer, random number and spin button tools.	• Children can use the timer, random number and spin button tools. • Children can combine tools to make ways to explore number.	*Preparation:* **Set Maths Game Scaffold as a 2Do for the class.** Select the following objectives:  Lesson: Display and outline the lesson aims and success criteria. Discuss vocabulary that has been used previously and introduce the new vocabulary. (Highlighted in yellow.)

		presenting data and information.			The Random Number Tool – The method of opening 2Calculate described will allow children to explore 2Calcuate to use as a tool whenever they wish instead of simply opening 2Dos. It may also encourage them to explore the other tools in Purple Mash. Demonstrate the skills being introduced, children could follow along on their own devices The Spinner Tool – If any children completed the extension in the last lesson, ask them to explain the tool. Demonstrate the skills being introduced, children could follow along on their own devices. Using the formula bar this way is a useful way to copy cell values to other cells in the spreadsheet even without the spin tool. The Timer – Use the link on slide 7 to open 2Calculate, use Advanced mode. Demonstrate using the tools in 2Calculate, children could follow along on their own devices The Equal to Tool – Ensure that children know how to type +, - * and / on their keyboard and what each symbol represents (particularly * and /). <u>Activity: Combining the tools</u> Support children in completing the activity. <u>Extension:</u> Children attempt to make their own times table test machine using the guess tool (this tool was introduced in y2 lessons).

					Review the vocabulary at the end of the lesson. Can the children define the vocabulary used in today's lesson?
	5 Unit 3.3 Lesson 5 Line Graphs	• 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.	• To use the line graphing tool in 2Calculate with appropriate data. • To interpret a line graph to estimate values between data readings.	• Children can use a series of data in a spreadsheet to create a line graph. • Children can use a line graph to find out when the temperature in the playground will reach a certain temperature.	*Preparation:* **Set 2Calculate as a 2Do for the class.** Select the following objectives:  Lesson: Display and outline the lesson aims and success criteria. Discuss vocabulary that has been used previously and introduce the new vocabulary. (Highlighted in yellow.) Activity 1: Make a Data Table Support children to enter data they can see into a table. The degrees symbol isn't required, but children might be interested in trying to type it. Knowing keyboard shortcuts for symbols can be quite useful. Formatting Data - Give children a chance to format the cells in their file. Click to reveal the example. Activity 2: Creating Charts Click to reveal the steps and support children in answering the questions.

					Activity 3: Adding another dataset Either ask children to record the answers on their spreadsheet using the post it notes or discuss verbally. In the 'time of year' discussion include noticing the temperature difference between inside and outside; in the summer these are likely to be closer (unless there is air conditioning), also notice the more level line for indoors, the heating is on which keeps the school at a constant temperature inside during the day. Review the vocabulary at the end of the lesson. Can the children define the vocabulary used in today's lesson?
	6 Unit 3.3 Lesson 6 Using a spreadsheet for budgeting	• 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.	• To use range notation in 2Calculate. • To use 2Calculate to create a model of a real-life situation. • To create a spreadsheet file with more than one sheet.	• Children can describe a group of cells using range notation. • Children can use a spreadsheet to plan a party budget. • Children can add multiple sheets to a spreadsheet file.	*Preparation:* **Set Party Budget as a 2Do for the class.** Select the following objectives:  Lesson: Display and outline the lesson aims and success criteria. Discuss vocabulary that has been used previously and introduce the new vocabulary. (Highlighted in yellow.) Budgets – Can children suggest appropriate items? Click to reveal suggestions on the slide and check that children understand each of the terms. Using more than one sheet in a file - Open the file on Slide 6 and show children how to scroll to the right to see all of the

					lists. Continues on the next slide. Show children how to add a sheet. A range of cells – (Slide 8) Click to reveal answers and further teaching points. Remind children of the need for the = sign for formulae. Use 2Calculate to demonstrate the example ranges, select other ranges and ask children to write the correct notation. Emphasise how the SUM formula includes the brackets around the range. Laying out the Budget sheet - Use the demonstration file to explore the Budget sheet; use the numbered post it notes on the demonstration file to make changes so that you don't need to keep referring to the PowerPoint. <u>Activity 1: Making a Budget Sheet</u> Support children in making their own budget spreadsheets. Children might need support understanding what a negative number in cell G4 means. <u>Activity 2: Changes to the data</u> Go through the changes shown on the slide and ask children to modify their budget spreadsheets to accommodate these changes. Compare this to what they would have to do if they were planning on paper. Review the vocabulary at the end of the lesson. Can the children define the vocabulary used in today's lesson?

Assessment Guidance	
Emerging	Children know that they can use a spreadsheet to present their collected data as a chart or graph (lessons 1 & 5). With support, they can create and begin to interpret graphs of simple data. Children can find specific cell locations within a spreadsheet (lesson 2). With support, they can enter formulae (lesson 3) They are beginning to understand the use of the spreadsheet tools to manipulate data (lesson 4).
Expected	Most children can create a table of data on a spreadsheet and can use this to automatically create charts/graphs from data. Children will be able to select the most suitable type of chart to use for their data, edit headers and apply axis labels (lessons 1 & 5). Children can find specific cell locations within a spreadsheet (lesson 2). They can enter formulae using both the formula wizard and the formula bar (lesson 3) and understand why formulae are used rather then 'hardcoding' calculations. Children can combine the use of tools in 2Calculate to manipulate and analyse data (lessons 4 & 6).
Exceeding	Children demonstrating greater depth will explore more complex functioning of the 2Calculate tools to create their own spreadsheets to explore number and interpret their own data.