

Spreadsheets: Solving Problems

Aim: 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 Children are given an investigation where the solution to a problem is best calculated using a spreadsheet. They must use prior knowledge and skills to find the best solution. I can use a spreadsheet to solve problems.	Success Criteria: I can create a formula to solve a specific calculation (using figures and cell references). I can replicate formulas over several cells. I can check calculations for errors. I can interpret data and make comparisons. Key/New Words: Spreadsheet, cell, row, column, formula, formulas / formulae, calculate, format, average, percent, edit, insert, ascending, descending.	Resources: Lesson Pack Desktop computer or laptop. This lesson is intended for use with Microsoft Excel but can be adapted to use any other spreadsheet software. Preparation: Open Pocket Money Problem – Children Spreadsheet. This will be used to demonstrate processes within the spreadsheet software during the lesson. The Pocket Money Problem – Teacher Spreadsheet can be used as reference for final solutions. Differentiated Pocket Money Problem Activity Sheet - as required
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Prior Learning: Children will have gained experience using spreadsheets in lessons 1-3 and already have tried entering and editing formulas, text and data, as well as sorting data and inserting graphs.

Learning Sequence

	Solving Problems with Spreadsheets: Explain to children that they are to be given an investigation. The problem that must be solved requires the use of a spreadsheet.	
	The Problem: Present the problem on the Pocket Money Problem Activity Sheet and allow children to discuss which option they believe will be the best, giving reasons why. Predict how the options are likely to change over time.	
	The Solution: Guide children to the conclusion that repeating a formula multiple times in a spreadsheet is far quicker than typing each time. No matter how large, numbers can be calculated quickly and accurately for any number of weeks.	
	Multiple Columns: In order to adjust or format more than one spreadsheet column at a time, demonstrate that multiple columns can be selected. Ask why this is useful and show process of adjusting column width of all columns in a selected range.	
	Merging Cells: Sometimes it may be appropriate for two or more cells to be merged together. Demonstrate this with the column headings of 'Option A' etc. by merging each across two cells.	
	Format to Currency: Ask how we need numbers to be displayed if we are typing in values to represent money? Establish the need for £ sign and two decimal places. What would 50p look like? What about 1p?	
	Try It Yourself: Can children use their prior knowledge to design a spreadsheet solution to the problem?  Use Pocket Money Problem Activity Sheet as a guide to creating and replicating required formulas in the Pocket Money Problem - Children Spreadsheet (template). Work through first row together, if necessary.  Use Pocket Money Problem Activity Sheet as prompts to design own spreadsheet as solution to the problem.	
	Plenary: Which option is the best choice: A, B or C? Did children manage to answer any of the questions from the Activity Sheet? Does everyone agree on the solutions?	

Taskit

Displayit: Can you create a suitable graph to display the results of your investigation?

Presentit: After you have investigated the results of the Pocket Money Problem, present your findings back to an audience. Make your case for which option you want to choose.