QCA Unit 5D

Introduction to spreadsheets

ICT Year 5

About the unit

In this unit children learn to enter numbers, labels and simple formulae into a spreadsheet and to use the data to calculate totals.

Children will be introduced to spreadsheet software and will explore how changes in price and quantity can affect total cost.

Children will apply what they have learned in this unit when exploring mathematical and scientific models.

Where the unit fits in

This unit builds on earlier units about information handling.

This unit assumes that children:

- can calculate total costs
- can recognise number patterns
- can use a reference to locate a grid in a square.

Technical vocabulary

- spreadsheet
- cell
- formula
- sum
- calculate

Resources

- spreadsheet software
- a variety of receipts
- a prepared spreadsheet

Expectations

At the end of this unit

most children will: use a spreadsheet to carry out calculations

some children will not have made so much progress and will: use a spreadsheet to produce a table of data

some children will have progressed further and will: use a spreadsheet to carry out calculations; explore the effects of changing the data in a spreadsheet.

Learning objectives Children should learn:	Possible teaching activities	Learning outcomes Children:	Points to note
Setting the scene			
• **key idea:** that computers can calculate costs and are useful when prices change	• Discuss the idea of working to a budget; for example, for a school trip. Discuss how totals will need to be recalculated if prices or quantities change, such as the cost of tickets or number of people.	• understand that costing models need to be changed	
Short focused tasks			
• **technique:** to enter labels and numbers into a spreadsheet	• Show the class how to move around a spreadsheet and how to enter numbers and text labels. Ask the class to identify the contents of particular cells. Ask the children to work in pairs to produce a table such as one showing the costs of the various ingredients which make up a meal.	• enter data into cells	Children who find the work difficult could be given a prompt sheet showing cell references.
• **technique:** to enter formulae into a spreadsheet	• Show the children how to enter a formula such as '=c2+c3' into a spreadsheet, Ask the children to use formulae to add the contents of two cells. Ask the children to explore what happens when data in the two cells are changed. Ask them to explore subtraction, multiplication and division and to predict how the contents of cells will change.	• enter data and formulae into cells, modify the data, make predictions of changes and check results	More able children could try more complex formulae such as '=3*c2+c3'. If they are not familiar with using brackets they may be surprised by the results.
• **technique:** to use 'SUM' to calculate the total of a set of numbers in a range of cells	• Remind the class how '=c1+c2+c3+c4+c5+c6' produces a total. Discuss the amount of typing required. Introduce the use of '=SUM(c1:c2)' as a shorter way of producing totals. Ask the children to use 'SUM' to calculate the total cost of a meal.	• use 'SUM'	Stress the importance of brackets. Some children will find it easier to add columns than rows.

Learning objectives Children should learn:	Possible teaching activities	Learning outcomes Children:	Points to note
Integrated task			
• to change data in a spreadsheet to answer 'what if...?' questions and check predictions	• Tell the class that they are going to plan a party and that they will use a spreadsheet to calculate the cost of materials for the party. Explain that they will be given a budget and that they are to decide what materials to buy so that they don't go over the budget. Tell them that they will need to conduct a survey to decide what materials they will need. Tell them that they will need to find out such things as the most popular food and drink. They will then need to draw graphs to show the results and analyse the graphs to decide what food and drink to buy. • Remind children how to create a simple spreadsheet and explain terms such as 'cell', 'calculate' and 'formula'. Then ask them to use data taken from receipts. Ask them to enter formulae and to use the spreadsheet to check different options, such as buying different amounts and brands of canned drink. • Ask the children to work in pairs to enter their data into the spreadsheet. Then get them to check that the total amount of money needed is within their budget and, if not, discuss which variables can be changed. They should check to see the effect of the changes. Ask the class to present their results and identify any choices they have made.	• create and use a spreadsheet to produce costings which are within budget	Children could collect the data as homework. The receipts should show a variety of prices so that children can use their spreadsheet model to explore a variety of options.