PARTY TIME

To use simple formulas to enter information into a spreadsheet. To see the immediate result of any changes to the information.

Pairs.

30 minutes at the computer; 20 minutes discussion/demonstration.

Previous skills/knowledge needed

The children should have had experience in using a simple spreadsheet and be capable of finding the totals or averages of columns of data. They should know that a spreadsheet allows them to store information.

Key background information

The use of spreadsheets is included on page 82 of the chapter on Handling Information in this book. Their use is also included in this modelling software chapter because they enable real situations to be modelled. The joy of such software is that by making a single change in one entry, all the values that depend on that entry are automatically updated across the spreadsheet. This makes spreadsheets very powerful tools in considering 'What would happen if ...?'.

This activity models some basic costings of a class party. The children are encouraged to make changes within the spreadsheet, such as the number of items ordered or price alterations, to see how this affects the total cost.

Preparation

The activities 'Looking at spreadsheets' on page 82 and 'Business plans' on page 87 should be carried out before asking the children to do the activity below. Set up a 'class party' computer spreadsheet in advance, as illustrated in the 'What to do' section, but do not include subtotals at this stage. (The idea is to use this for a whole class or large group demonstration on how to use formulas to calculate subtotals.) Depending on the children's ability and experience, you may also need to set up the same spreadsheet without numbers for the children to type in their own figures from photocopiable page 148. Make one copy of this sheet for each child. You should also prepare a sheet of questions (or several to provide differentiation) to encourage the children to use the modelling opportunities offered by spreadsheets. As all the children's items will be different, you should refer to these by their number in column A. Include questions such as: 'By how much would the grand total increase if you bought five more of item 1?', 'What is the difference between the total costs of item 2 and item 3?' and so on. Alternatively, you can ask all of the children to work on the spreadsheet example below and focus your question sheets around this.

Vocabulary

Cell, cashflow, formula, total.

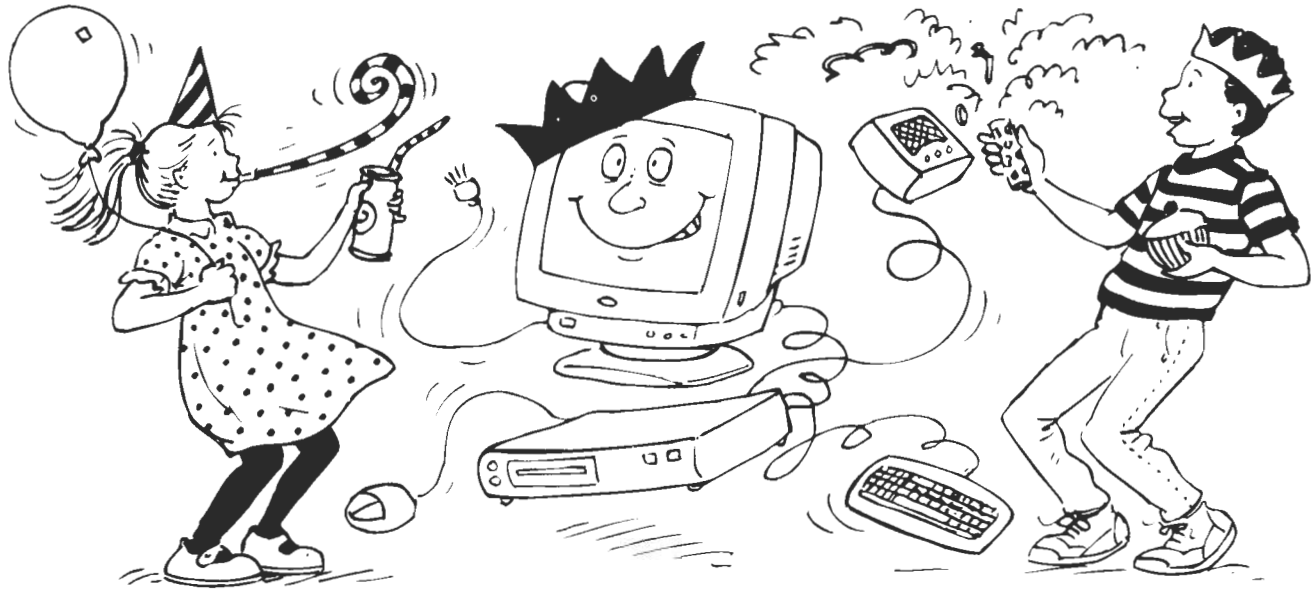
Resources needed

A computer, spreadsheet software, a printer, a copy of your question sheet for each child, items of food for a class party, pens or pencils, photocopiable page 148.

What to do

It would be best to set this activity within the context of planning for a real class party. Give each child a copy of photocopiable page 148 and explain that you want them to write down five things they would like to eat at the class party. Ask them to fill in an estimate of the cost and quantity for each item. Some likely responses are already indicated in the spreadsheet on the photocopiable sheet.

Next, explain that the children are going to enter their figures into a computer spreadsheet to find out the total cost of their chosen food items and to see what would happen if any of the prices or quantities were to change.



Open up your computer version of the spreadsheet below (see Preparation) and provide a whole class or large group demonstration of the formula facility to explain how to subtotal the food costs. The chart below shows the correct formula:

	A food	B cost per Unit	C No. required	D Subtotal
1	crisps	35	20	B1xC1
2	peanuts	40	5	B2xC2
3	biscuits	85	4	B3xC3
4	oranges	15	30	B4xC4
5	fizzy drink	45	30	B5xC5
6				
7				
8				
9				
10				
11				
12				
13	grand total			SUM (D1:D5)
14				

The formula is used to calculate the subtotals in column D. This formula need only be entered once, as the spreadsheet can then be asked to replicate it in each cell of column D. In this case, the general formula is B1 X C1, which is then replicated as B2 X C2 in the next row down and so on. Finish by showing the children how to calculate the grand total. This will be a 'sum' function which adds up all the subtotals, as shown in the chart above. The grand total may be placed in cell D6 and the function to calculate it will be 'SUM (D1:D5)' placed into the cell D6.

Now let the children work in pairs to enter their own figures from their photocopiable sheets into the computer. They can either use the spreadsheet structure you have prepared or set up this up for themselves (they will need plenty of support with this). They can then answer the questions on the photocopiable sheet and go on to play the modelling game, prompted by your question sheet. What if the cost of item 1 went up by 5p, for example? They will see that if they change the entry in cell B1, then every cell containing a value which is dependent on B1 will be updated right through to the grand total. A list of these types of questions, depending on the children's abilities, should provide plenty of opportunities to model the results of such changes.

Suggestion(s) for extension

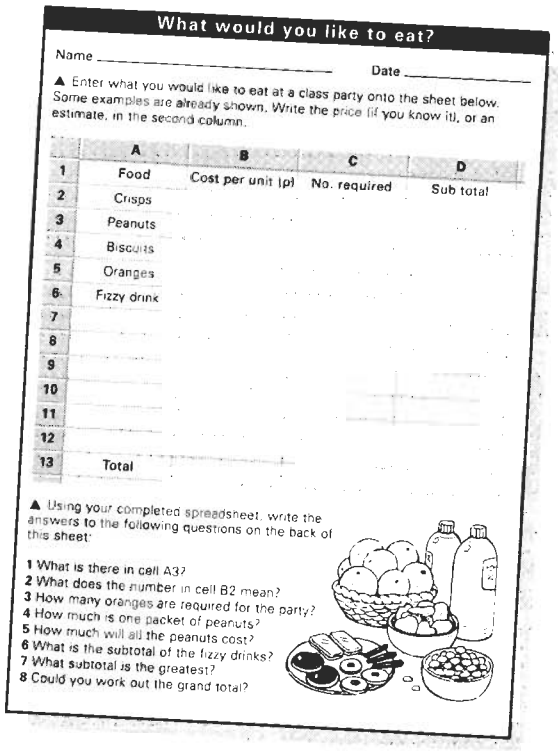
The more able children could include in their spreadsheet an additional cell relating to the number of children attending the party. The value within this cell could be used to calculate the values in column C. Can they plot a graph illustrating the connection between the number of children at the party and the total cost? They may also like to add further items of food to create a larger spreadsheet. Finally, they could produce a before and after-party spreadsheet, with the after-party sheet detailing what food was left and how much could be paid back if the goods were returned!

Suggestion(s) for support

The less confident children will require a greater degree of support during the setting up of the spreadsheet. Their series of questions should reflect their ability concentrating on the given spreadsheet rather than enlarging it.

Assessment opportunities

This activity will allow you to make assessments as to how well the children use IT software to organise, analyse and interpret information held on the spreadsheet. Are the children able to use the spreadsheet facilities to model the party cashflow with understanding? Do they appreciate that by making a single change of value in one cell all other cells that depend on its value will also be changed? Can they work out 'What if we made a change here ... how would that affect something here?'



What would you like to eat?

Name _____ Date _____

▲ Enter what you would like to eat at a class party onto the sheet below. Some examples are already shown. Write the price (if you know it), or an estimate, in the second column.

	A	B	C	D
1	Food	Cost per unit (p)	No. required	Sub total
2	Crisps			
3	Peanuts			
4	Biscuits			
5	Oranges			
6	Fizzy drink			
7				
8				
9				
10				
11				
12				
13	Total			

▲ Using your completed spreadsheet, write the answers to the following questions on the back of this sheet:

1 What is there in cell A3?
2 What does the number in cell B2 mean?
3 How many oranges are required for the party?
4 How much is one packet of peanuts?
5 How much will all the peanuts cost?
6 What is the subtotal of the fizzy drinks?
7 What subtotal is the greatest?
8 Could you work out the grand total?

Display ideas

Use an enlarged printout of the spreadsheet as a focus of your display, with coloured threads leading out to word processed captions explaining how the values within the sheet are reached. Pictures of various party food items produced on graphics software would brighten the display and add further interest.

Reference to photocopiable sheet

Photocopiable page 148 provides a spreadsheet for the children to fill in the prices and quantities of food items that they would like to include in the party. They then enter these figures into a computer spreadsheet as part of the activity above. Some simple questions relating to the spreadsheet are included.

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