How can we save electricity?

What this is about

This shows you how to make a spreadsheet 'model' of electricity use at home. It shows that different appliances use different amounts of electricity and that if you want to save money, cutting down some things is better than others. To quote the curriculum documents, the children use this 'IT-based model to help them make decisions'. If the children could create and use a spreadsheet like this you would say that they could 'design a computer model'.

Starting points

List all the things that use electricity at home. Which of these do you think, use the most electricity?

Get an electric kettle and a light bulb and look for the power ratings. Discuss which uses the most electricity and which you use the longest. The computer will help you work out how much they cost to run.

What to do

Start a new spreadsheet and follow the instructions in the diagram.

Look at the 'rating plate' on various electrical appliances and record their power rating.

Get the children to tally how long each appliance was used for daily. The should add their results to the spreadsheet table.

Questions to ask

Which appliance do you use the most?

Which appliance costs the most to run?

Which appliance costs the least to run?

Once all the results have been added, you can set a budget for the electricity bill. The children can then change the values in the Time used column and see if they can match the figure you set.

For example:

How could you get your electricity bill down to 100 pence a day?

Extra

Use a spreadsheet to do a survey of your use of water. Find out how much water a bath holds, how many baths you take and so on.

	A	B	C	D	E
1	How can we save electricity?				Pence
2			One Energy unit costs		6
3	Appliance	Power	Time used	Energy units	Cost
4		W	Minutes		p
5	Kettle	2700	70	3.2	19
6	Hair dryer	400	10	0.1	0.4
7	TV	190	240	0.8	5
8	Lamps	100	1000	1.7	10
9	Computer	100	150	0.3	2
10	Dryer	3000	180	9.0	54
11				TOTAL	89

How to set up your spreadsheet
1. Copy rows 1 to 4 as shown here.
2. Copy columns A and B as shown here.
3. Enter the Time used in column C.
4. Move to cell D5 and enter the formula =B5*C5/60/1000
This works out the electricity company's energy units.
5. Move to cell E5 and enter the formula =D5*E2
This turns the electricity company's energy units into money.
6. Highlight cells D5 to E5 and choose Copy.
7. Highlight cells D6 to E10 and choose Paste.
8. Move to cell E11 and enter =SUM(E5:E10)
This works out the total electricity bill.