Have Your Fill

You need: a computer spreadsheet or graph paper and a calculator

ACTIVITY

Eveni's family is investigating buying a service station. Eveni decides to find out how much petrol is sold at four local service stations, all of which are selling their petrol for 100 cents a litre. Eveni gets these figures for 1 week, in litres of petrol sold:

Litres of Petrol Sold

Day	Go-Gas	Haka Motors	Propel	Brrrm Power
Monday	8 575	6 949	11 238	6 511
Tuesday	6 659	5 466	9 757	4 379
Wednesday	5 934	5 126	9 479	4 290
Thursday	7 120	6 124	10 004	5 332
Friday	9 781	8 129	13 025	8 127
Saturday	10 362	8 943	14 567	9 203
Sunday	10 188	9 240	12 999	8 661

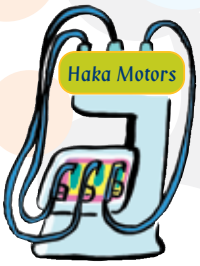
Eveni uses a computer spreadsheet to graph the sales. First he creates the table of sales, and then he uses the scatter plot on his graphing function.

1. **a.** Use a spreadsheet to graph the petrol sales.
   b. What patterns do you notice?

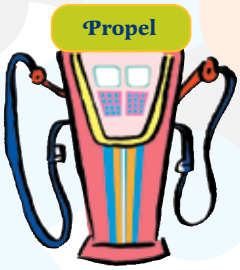
2. Assume that each service station is getting 20 cents from each litre of petrol sold. (The remainder is the cost of purchasing the petrol from oil companies and taxes.) Use your spreadsheet to make these calculations:
   a. How much money in total does each service station take from their petrol sales in the week given?
   b. How much of that money goes to the service station?

3. The following week, the City Council adds a tax of 10 cents per litre to pay for roading projects. This tax must be paid by each service station from its petrol sales.
The four service stations decide to do different things.

Go-Gas and Brrrm Power both pass the tax on to motorists by charging 110 cents per litre.



Haka Motors chooses not to pass the tax on to motorists. It keeps the price at 100 cents per litre and pays the tax itself.



Propel increases the price to 115 cents per litre to cover the new tax and extra running costs.

a. How much does each service station now get per litre after oil company charges and taxes?

b. Eveni checks on the sales figures (in litres) at the end of the first week of the new price scheme.

Litres of Petrol Sold

Day	Go-Gas	Haka Motors	Propel	Brrrm Power
Monday	7 893	8 134	9 236	6 001
Tuesday	6 356	6 987	7 405	4 113
Wednesday	5 453	7 132	6 223	3 998
Thursday	6 264	8 003	7 435	5 148
Friday	7 853	10 678	9 998	7 866
Saturday	8 790	11 987	10 961	8 785
Sunday	9 112	11 055	9 046	8 056

Enter these new figures into your spreadsheet and create a bar graph showing sales before and after the tax change.

c. How have the price changes affected the sales for each service station?

4. a. Create a graph similar to the one in **1a** showing sales through the week.
b. Has the pattern of sales on different days remained the same?

5. a. Compare the money (after deducting purchase costs and taxes) that went to each service station from the sales in question **1** at the old price with what they now get from sales at the new price.
b. Which service station has gained the most by changing their price? (Another graph may help.)