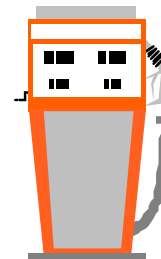


Price at the Pump



Petrol prices are not the same at all petrol stations.

- What factors do you think might influence the price of petrol at the pump?
- How would you collect data to investigate your ideas?



Teacher Notes

Unit Advanced Level, Using and applying statistics

Notes on the Activity

This idea was contributed by Alex Marsh who would welcome any feedback on the usefulness and effectiveness of the activity. (Contact details are given below).

Page 1 could be used for students to jot down their ideas as a starting point for class discussion.

Main points for discussion:

Petrol prices are not the same at all petrol stations. City centres, urban areas, suburban areas and rural areas often have different petrol prices.

Is there a relationship between price and distance from a city centre?

Is the relationship the same as you travel out of the city in all directions?

Apart from distance from city centre, do other factors affect the price?

Presence of large supermarket with petrol station? Population density?

Nearby motorway? Industrial area? Out of town shopping centre? Traffic density?

How could data about prices and locations be collected in a representative way?

Mapwork would be involved.

Use of Data

Further investigation may lead to graphical presentation, then to the determination of a function describing the relationship, and use of the relationship to predict data for a new situation. Refinement of the model would be an extension for some students.

It may not be possible to determine a function that accurately maps these factors to the price variation BUT students could approach the data statistically and formulate 'rules' about the effect of different factors on the petrol prices, e.g. Asda superstore within 3 miles gives -2p per litre in that area; access to major motorway junction within 1 mile gives +1p per litre, etc. Places where these rules overlap will provide the severest test!

Once a function or set of rules has been established, students could contact schools in other areas to compare their findings and to have their rules tested in different situations. Contact between city schools and rural schools could provide whole new data sets for analysis.

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