

## TRAFFIC PATTERNS

**To gather data using data collection sheets. To enter this into a database and then plot graphs to draw conclusions.**

†† Pairs.

⌚ 20 minutes at the computer; Data collection over a week.

### Previous skills/knowledge needed

The children should know how to complete a tally chart and how to enter information into a simple database.

### Key background information

Using IT to handle data collected from a simple traffic survey may seem unnecessary in the classroom. However, such an activity provides a scaled down version of what happens in the real world, where IT is often essential to handle millions of items of information in large scale research. Only through using computers can any patterns in the data be identified and illustrated. The children will obviously collect a much smaller amount of data but hopefully it will be sufficient to enable them to identify some trends in the traffic flow near to your school. For example, it may be that there is a daily difference in the frequency and types of traffic that go past the school, caused by factors such as market day, weekend travel on Mondays and Fridays, early closing mid-week or other local influences. The activity will allow the children to practise their IT information handling skills, enabling them to plot graphs and draw some conclusions from these. It could form part of a geography study or project on traffic or the environment.



### Vocabulary

Tally, frequency, field, database, trend, histogram (frequency block graph).

### Preparation

You will need to organise a suitable rota and arrange adult supervision for when the children go out to collect the traffic data. Working in pairs rather than small groups will help the children to stay more focused on the task. You may wish to create some simple data collection sheets for the traffic survey, or ask the children to design their own.

The software required for this activity is a straightforward frequency chart type with graph drawing options. Examples could include Data Plot (Archimedes) or Counter for Windows (PC). Before the children carry out the traffic survey, set up a simple tally database on the computer, adding in the survey times and the types of vehicle to be logged. Possible vehicle categories could include bicycle, motorbike or scooter, car, van, lorry, bus and other (mobile crane, JCB, dumper truck, tractor and so on).

### Resources needed

A computer, a printer (preferably colour), frequency chart database software with graph drawing options (see Preparation), spreadsheet software (optional), a data collection sheet (prepared by the teacher or children), pens, a stopwatch.

### What to do

Tell the children that they are going to carry out a traffic survey over a period of one week. Start by discussing the local traffic flow and what influences it. Encourage the children to make some predictions as to how traffic may be affected by factors such as people going to work, market day, early closing and so on. What would be a good time to log the traffic flow? How long should each survey session last? Would there be an advantage in logging more than once each day? Whatever their final decisions, the children will need to log the traffic for the same amount of time and at the same time of day throughout the week to make it a fair test. Help the children to decide on the types of vehicles to be logged, and reach a consensus on when a van becomes a lorry! Make sure they are clear about how to keep a tally of the traffic and that they know their position on the rota. Allow each pair to carry out the survey, using the data collection sheets to gather the information (see Preparation). Each day, the children can feed the data into the computer database ready to print out histograms of the traffic frequencies. If several logs are made each day do not add them together on the database as it is important to compare the traffic at the same (separate) times each day. Ask the children to plot graphs so that the traffic totals are clearly illustrated on a daily basis. Patterns should emerge as the week

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progresses. For example, the volume of traffic may lessen on early closing days but increase on market days. By the end of the week the children should have produced a minimum of five graphs for comparison. Produce a short questionnaire to make them examine their graphs and draw some conclusions. For example, on which days are there more bicycles? What is the trend in numbers of lorries during the week? Which vehicle is the most commonly/least commonly used?



### **Suggestion(s) for extension**

More able children could enter their findings into a spreadsheet. Graphs of the totals of particular vehicle types could then be plotted to see how these vary across a week.

### **Suggestion(s) for support**

Ensure that less confident children are paired with a more confident friend. Depending on the volume of traffic, ask each child to tally one type of vehicle.

### **Assessment opportunities**

This activity will enable you to assess how well the children use IT to organise and analyse the information from their traffic survey. Look for how confident they are in entering the data, plotting the graphs and using the graphs to make conclusions.

### **Display ideas**

Print out the children's graphs in colour and place these alongside their findings to create a colourful display. If possible, add some photographs of the children logging the traffic and print out some extracts from their conclusions printed using large, bold text.