

## PRESENTING STATISTICS AND DIAGRAMS

Once information has been collected, it is usually analysed using a variety of statistical techniques and then presented in graphs, charts or tables. The aim of section 3 is to look at a few common techniques for presenting information in this way. The focus is on interpreting this kind of data, rather than calculating (though a certain amount of calculation cannot be avoided).

### 1. Pie charts

Pie charts are often used to show the proportions of various parts of the findings in relation to each other and to the whole.

➔ a) Look at the pie chart in Diagram 1.

- 1 What does the circle represent?
- 2 How many nationalities are in the Institute?
- 3 What nationality is represented by the largest segment\*?
- 4 Which two segments are the same size?
- 5 Are there more men or women from France?
- 6 How many Italians are there?

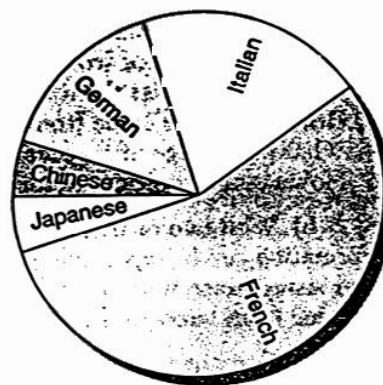


Diagram 1  
 Nationalities at the  
 ABC English Language Institute

➔ b) Discuss what kinds of information can be represented in pie charts. What advantages do pie charts have over columns of numbers or a written description? What kinds of information must be omitted from pie charts?

➔ c) The following information was collected in a survey of postgraduates. Construct a pie chart to illustrate the kinds of cars owned by postgraduate students. You may not need to include all the information given.

	Fiat	Honda	Ford	Renault	no car
men	6	5	5	3	8
women	2	5	8	2	6

## 2 Histograms

Histograms (or bar graphs) are also used to describe findings, but the emphasis is usually comparing different parts to each other, rather than in relation to the whole.

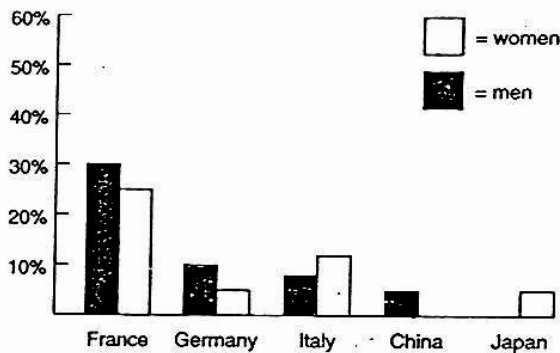


Diagram 2

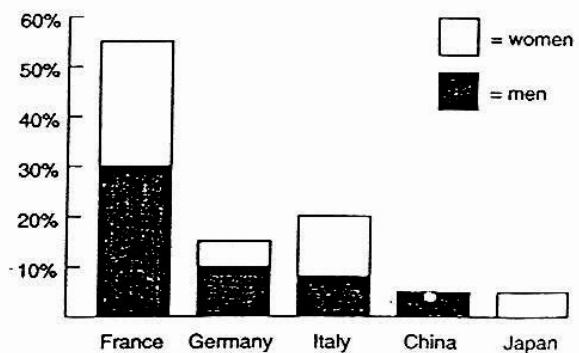


Diagram 3

*Nationalities at the ABC English Language Institute*

➤ a) Look at the histograms in Diagrams 2 and 3. They show two ways to illustrate the same information.

- 1 What percentage of women come from France?
- 2 Which country has the fewest women?
- 3 How many men come from Italy?
- 4 What percentage of students come from Italy?
- 5 How many people are in the Institute?

➤ b) With two or three other students, discuss what kinds of information can be represented in histograms. How do pie charts differ from histograms? What kinds of information can be included in or excluded from histograms? What are the advantages of using histograms?

➤ c) Construct a histogram that illustrates the car-owning patterns of postgraduate men and women, using the information in Task 3.1c. Remember, in most histograms, the horizontal axis\* is used to indicate the different segments of the population and the vertical axis\* indicates the number, percentage or amount of difference between groups.

### 3 Line graphs

Often graphs are used to present experimental results which involve some kind of change. This usually involves two sets of measurements called variables.

➔ a) You are measuring changes in the size of feet of pre-school children between the ages of two and five.

- 1 What are the two variables?
- 2 Which variable causes the change?  
(We call the variable that causes the change the *independent* variable and the other the *dependent* variable.)

Look at the first graph, in Diagram 4.



Diagram 4 Profile of Leanne's shoe size

- 3 Which variable is on the horizontal axis?
- 4 Which variable is on the vertical axis?
- 5 What size shoe does this child wear at three?
- 6 When does she wear a size 5 shoe?
- 7 Does she change shoe sizes every six months? Explain.

Look at the second graph, in Diagram 5.

- 8 Which variable is the independent variable now?
- 9 Which variable is the dependent variable?
- 10 Which shoe size is most common in pre-school?

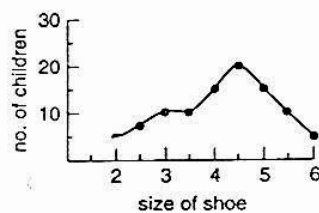


Diagram 5 Shoe size of children in Bo Beep Playschool

- 11 How many children wear size 4?
- 12 How old do you think the children in the play school are generally?  
(You may wish to refer to Diagram 4.)