

Most students are required to write about statistical data clearly and accurately. This unit explains and practises the basic language of numbers and percentages, while presenting data in charts and tables is dealt with in Unit 2.11 Visual information.

1 The language of numbers

In introductions numbers are often used to give an accurate account of a situation:



Approximately 1800 children between the ages of five and 12 years were randomly selected . . .

The earth's atmosphere appears to be gaining 3.3 billion metric tons of carbon annually . . .

. . . but five winters in the twentieth century were more than 2.4°C colder than average

Figures and **numbers** are both used to talk about statistical data in a general sense:

The **figures/ numbers** in the report need to be read critically.

But number is used more widely:

13 is an unlucky **number**.

She forgot her phone **number**.

Digits are individual numbers.

4,539 – a four **digit** number.

Both **fractions** ($1/2$) and **decimals** (0.975) may be used.

There is no final 's' on hundred/ thousand/ million used with whole numbers:

Six **million** people live there.

but: **Thousands of** people were forced to move from the area.

When writing about **currencies** write \$440 *m.* (440 million dollars).

Rates are normally expressed as percentages (e.g. *the literacy rate rose to 75%*) but may also be per thousand (e.g. *the Austrian birth rate is 8.7*).

It is normal to write whole numbers as words from one to ten and as digits above ten:

Five people normally work in the café, but at peak times this can rise to **14**.

2 Percentages

These are commonly used for expressing degrees of change:

Since 2008 the number of prisoners has risen by 22 per cent.

■ **Complete the following sentences using the data in the table opposite.**

- (a) Between 2007 and 2008, the number of overseas students increased by _____ per cent.
- (b) The number increased by _____ per cent the following year.
- (c) Between 2007 and 2010 there was a _____ per cent increase.

Overseas students in the university 2007–2010

2007	2008	2009	2010
200	300	600	1000

3 Simplification

Although the accurate use of numbers is vital, too many statistics can make texts difficult to read. If the actual number is not important, words such as *various*, *dozens* or *scores* may be used instead:

The snowstorm closed 47 schools.

The snowstorm closed dozens of schools.

few	less than expected
a few	approximately 3–6 depending on context
several	approximately 3–4
various	approximately 4–6
dozens of	approximately 30–60
scores of	approximately 60–100

■ Rewrite the following sentences using one of the words or phrases in the table above.

(a) Only three people attended the meeting.

Few people attended the meeting.

(b) 77 students applied for the scholarship.

(c) He re-wrote the essay three times.

- (d) Last year 38 books were published on biogenetics.
- _____
- (e) Five names were suggested but rejected for the new chocolate bar.
- _____
- (f) The students thought of four good topics for their project.
- _____

4 Further numerical phrases

The expressions listed below can also be used to present and simplify statistical information. For example:



The course fees rose from \$1,200 to \$2,500 in two years.

could be written:

The course fees doubled in two years.

If appropriate, *roughly/ approximately* can be added:

The course fees roughly doubled in two years.

one in three	one in three engineering students is from China
twice/ three times as many	twice as many women as men study business law
a five/ tenfold increase	there was a fivefold increase in the price of oil
to double/ halve	the rate of infection halved after 2001
the highest/ lowest	the lowest rate of home ownership was in Germany
a quarter/ fifth	a fifth of all employees leave every year
the majority/ minority	the majority of births are in hospital
on average, the average	on average , each judge hears two cases per day
a small/ large proportion	the website generates a large proportion of their sales

- NB. 5–20 per cent = a tiny/ small minority
21–39 per cent = a minority
40–49 per cent = a substantial/ significant minority
51–55 per cent = a small majority
56–79 per cent = a majority
80 per cent + = a large majority

■ **Re-write each sentence in a simpler way, using a suitable expression from the list above.**

- (a) In 1975 a litre of petrol cost 12p, while the price is now £1.20.

- (b) Out of 18 students in the group 12 were women.

- (c) The new high-speed train reduced the journey time to Madrid from seven hours to three hours 20 minutes.

- (d) The number of students applying for the Psychology course has risen from 350 last year to 525 this year.

- (e) Visitor numbers to the theme park show a steady increase. In 2007 there were 40,000 admissions, in 2008 82,000 and 171,000 in 2009.

- (f) More than 80 per cent of British students complete their first degree course; in Italy the figure is just 35 per cent.

- (g) Tap water costs 0.07p per litre while bottled water costs, on average, 50p per litre.

- (h) The rate of unemployment ranges from 18 per cent in Spain to 3 per cent in Norway.

- (i) Seven out of every 100 computers produced had some kind of fault.
- _____
- (j) 57 per cent of the members supported the suggestion, but 83 per cent of these had some doubts.
- _____

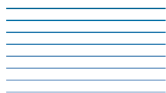
5 Practice

■ The following data was collected about a group of 15 international students. Write sentences about the group using the data.

Mother tongue		Future course		Age		Favourite sport	
Arabic	2	Architecture	1	21	1	climbing	2
Chinese	8	Economics	3	22	3	cycling	1
French	1	Education	2	23	9	dancing	3
Japanese	1	Maths	6	24	–	football	3
Korean	2	Physics	2	25	–	swimming	5
Spanish	1	Psychology	1	26	1	tennis	1

- (a) *A small majority have Chinese as their mother tongue.*
- (b) _____
- (c) _____
- (d) _____
- (e) _____
- (f) _____

Problems and solutions



Writing tasks frequently ask students to examine a problem and evaluate a range of solutions. This unit explains ways in which this kind of text can be organised. Note that some of the language is similar to that practised in Unit 2.1 Argument and discussion.

1 Structure

■ Study the organisation of the following paragraph:

1.1

HOW CAN ROAD CONGESTION BE REDUCED?

Currently, roads are often congested, which is expensive in terms of delays to the movement of people and freight. It is commonly suggested that building more roads, or widening existing ones, would ease the traffic jams. But not only is the cost of such work high, but the construction process adds to the congestion, while the resulting extra road space may encourage extra traffic. Therefore constructing more roads is unlikely to solve the problem, and other remedies, such as road pricing or greater use of public transport, should be examined.

(a) Problem	Currently, roads are often congested, which is . . .
(b) Solution A	It is commonly suggested that building more roads, or widening . . .
(c) Arguments against solution A	But not only is the cost of such work high, but . . .
(d) Solutions B and C	. . . other remedies, such as road pricing or greater use . . .

2 Alternative structure

The same ideas could be re-ordered to arrive at a different conclusion:

2.1

HOW CAN ROAD CONGESTION BE REDUCED?

Currently, roads are often congested, which is expensive in terms of delays to the movement of people and freight. It is commonly suggested that building more roads, or widening existing ones, would ease the traffic jams. This remedy is criticised for being expensive and liable to lead to more road use, which may be partly true, yet the alternatives are equally problematic. Road pricing has many practical difficulties, while people are reluctant to use public transport. There is little alternative to a road building programme except increasing road chaos.

Problem	Currently, roads are often congested, which is . . .
Solution A	It is commonly suggested that building more roads, or widening . . .
Arguments against solution A	This remedy is criticised for being expensive . . .
Solutions B and C and arguments against	Road pricing has many practical difficulties, while people are . . .
Conclusion in favour of solution A	There is little alternative to a road building programme . . .

3 Practice A

■ Analyse the following paragraph in a similar way:

3.1

MANAGING TOURISM GROWTH

Many developing countries have found that the development of a tourism industry can bring social and environmental drawbacks. Growing visitor numbers can cause pollution and put pressure on scarce resources such as water. One possible solution is to target wealthier holidaymakers, in order to get the maximum profit from minimum numbers. However, there is a limited number of such visitors, and this market requires considerable investment in infrastructure and training. Another remedy is to rigorously control the environmental standards of any development, in order to minimise the impact of the construction. This requires effective government agencies, but is likely to ensure the best outcome for both tourists and locals.

Problem	
Solution A	
Argument against solution A	
Solution B	
Conclusion in favour of B	

4 Vocabulary

The following words can be used as synonyms for *problem* and *solution*.

three main difficulties have arisen . . .	the best remedy for this may be . . .
the main challenge faced by nurses . . .	two answers have been put forward . . .
one of the concerns during the recession . . .	another suggestion is . . .
the new process created two questions . . .	Matheson's proposal was finally accepted.
the team faced six issues . . .	this was finally rectified by . . .
our principal worry/ dilemma was . . .	

5 Practice B

- Use the following points to build an argument in one paragraph, using the box below.

Topic:	University expansion
Problem:	Demand for university places is growing, leading to overcrowding in lectures and seminars
Solution A:	Increase fees to reduce demand
Argument against A:	Unfair to poorer students
Solution B:	Government pays to expand universities
Argument against B:	Unfair to average taxpayer who would be subsidising the education of a minority who will earn high salaries
Conclusion:	Government should subsidise poorer students

University expansion

Currently there is increasing demand ...

6 Practice C

■ Think of a similar problem in your subject area. Complete the table and write a paragraph that leads to a conclusion.

Topic	
Problem	
Solution A	
Argument against A	
Solution B	
Argument for/against B	
(Solution C)	
Conclusion	