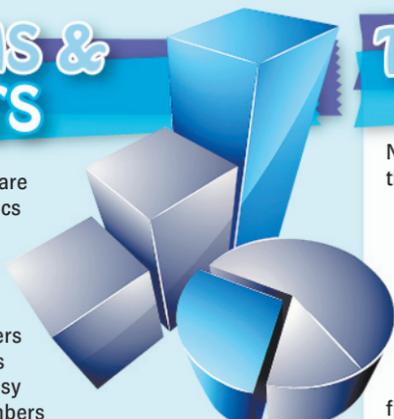


GRAPHS & CHARTS

GRAPHS and charts are used often in statistics to present facts in a visual form. They are diagrams that display the relationship between numbers and quantities. Graphs and charts are an easy way to compare numbers and illustrate data making facts clearer and more understandable. There are a number of different ways to display statistics: pie charts, bar graphs, picture graphs, histograms, line graphs, flow charts, or-



ganisational charts, XY charts and scatter-plot charts. The type of data, the audience it's directed to and the questions that need to be answered determine which type of graph or chart is best.



BEWARE

STATISTICS are a powerful tool but you need to be careful when using statistics as they're not always clear and accurate.

Data can be misleading because people can manipulate or modify results to support their viewpoint. This can cause a mistrust of statistics. We are led to believe that numbers are unquestionably correct but errors in methodology, bias and differing interpretation can produce unreliable outcomes. It is possible to present information in a clear, accurate and unbiased way.

CHECK IT OUT

BE sure to visit your newspaper's online website and check out the task cards for Newspapers in Education this week.

There are lots of activities to do using statistics.

THE STATS

NUMBERS can't talk – or can they?

In mathematics there is an entire field dedicated to getting answers out of numbers. It is called statistics; the facts and figures that are collected and examined for information on a given subject.

To achieve the results in this field of mathematics, statisticians rely on three related disciplines: data analysis (the gathering, display and summary of data), probability (the laws of chance) and statistical inference (the science of drawing statistical

conclusions from specific data using knowledge of probability).

Statistics can help us make good decisions. The methods used to collect and analyse data help people identify, study and solve a variety of problems.

People in varied occupations use statistics. Health professionals, weather forecasters, engineers, scientists and economists are some of those who analyse data and draw inferences from statistics to perform their job.

Journalists often use data in news stories to help their readers make sense of information.

WHAT'S AVERAGE?

THERE are many "averages" in statistics but the three most common, the ones you are most likely to encounter and use are the mean, median and mode.

► **The mean** is the average used, where you add up all the values in a set of numbers and then divide the sum by the number of values in the set.

► **The median** is the middle value in the list of numbers. To find the median, the numbers are listed in numerical order, so you may have to rewrite your list first.

► **The mode** is the value that occurs most often. If no number is repeated, then there is no mode for the list.

► **The range** is just the difference between the largest and smallest values.

Example

The scores made by each batter in a cricket team are recorded and the mean, median, mode and range calculated. Here are the results.

SCORES

19 42 25 54 8 31 15 25 13 4 17

► **Mean** = $19 + 42 + 25 + 54 + 8 + 31 + 15 + 25 + 13 + 4 + 17 = 253 \div 11 = 23$

► **Median** = 4 8 13 15 17 19 25 25 31 42 54

► **Mode** = 25

► **Range** = $54 - 4 = 50$

LET'S TALK

DO you think the statistics or data represented in the media is always accurate?

Why do you think that the figures are sometimes misleading?

Discuss the good and the bad of statistics and let us know what you think.

Send your opinion to nie@apn.com.au

WEEKLY CHALLENGE

► FIND a story or feature in the newspaper that uses statistics. How are they used?

► From the newspaper, find an example of the way numbers are used in ages, dates, times, prices, scores, weather, fractions, addresses, crosswords, TV channels, temperatures, percentages, numbers over 20, numbers below 10 or telephone numbers.

► Get measuring. Write down the measurements for the following: area of the crossword, width of a page, length of the biggest picture, width of the weather section, width of the cars for sale column, height of the masthead (name of the paper), size of the squares in the crossword, or the height of the biggest headline

NEXT WEEK: HOT TOPIC – What's happening in the news?

