



Comparing data

- Comparing data using charts
- Comparing data using an average and the range

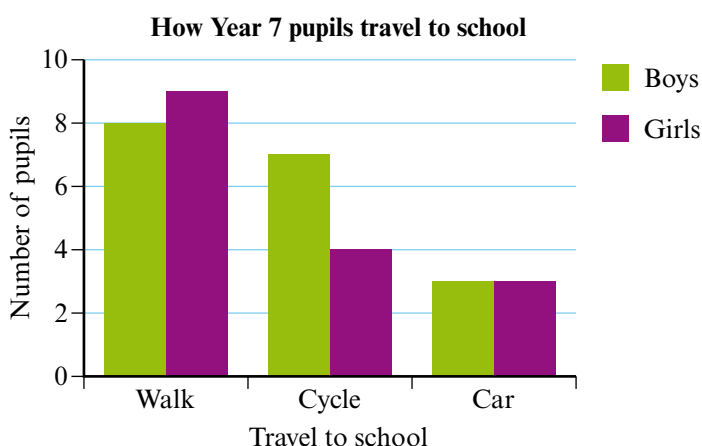
Keywords

You should know

explanation 1

1 The bar chart shows how the members of a Year 7 class travel to school.

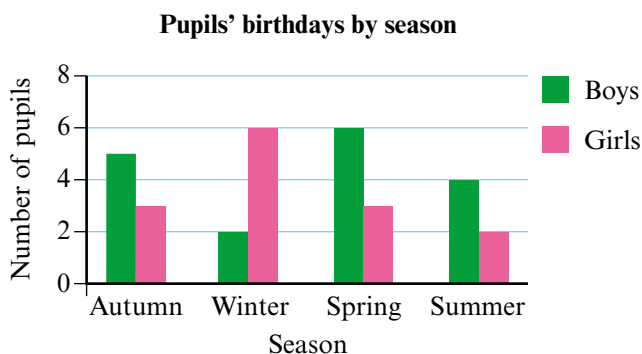
- a** How many girls are there in the class?
- b** How many children travel to school by car?
- c** What is the modal way to travel to school for girls?



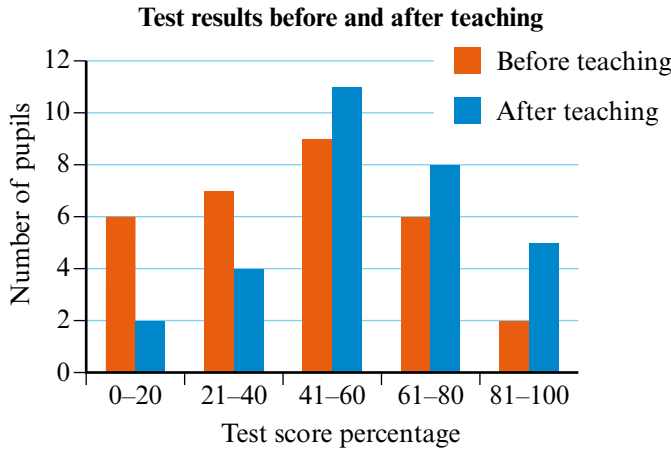
***d** How many more boys walk to school than cycle?

2 The bar chart shows which season the members of a class were born in.

- a** How many children were born in Autumn?
- b** Which season had the most births?
- c** How many girls are there in the class?
- d** How many more boys were born in Spring than girls?
- e** How many more girls were born in Winter than Summer?



- 3** This bar chart shows two sets of test results for a group of pupils.



The first test was given during the introduction to a topic, before it had been taught.

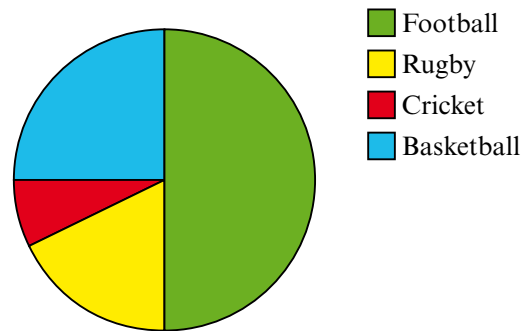
The second test was given after the topic had been taught.

- How can you tell from looking at the bar chart that the pupils did better after the topic was taught?
- How many pupils scored more than 40% before teaching?
How many scored more than 40% after teaching?
- Explain how you know that the modal class for both tests is 41–60.
- Why wouldn't you use the modal class to compare the results in this case?

explanation 2

- 4** A group of Year 7 boys were asked to vote for their favourite sport. The results are shown in the pie chart.

Year 7 boys' favourite sports

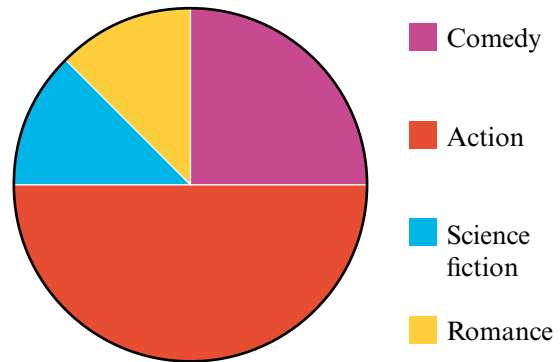


- What sport was most popular?
- What sport was least popular?
- What fraction of pupils voted for football?
- If 60 people voted altogether, how many voted for Football?
- What can you say about the number of pupils who voted for Basketball compared to the number who voted for Football?

- 5** A group of pupils were asked to vote for their favourite type of film.

The results are shown in the pie chart.

- a**
- i** What type of film was most popular?
 - ii** What fraction of pupils liked this type of film best?
- b** What fraction of pupils voted for Comedy?
- c** If 80 pupils voted altogether, how many voted for Comedy?
- d** Read these statements. For each one, write down whether it is true or false.
- i** More people voted for Science fiction than Romance.
 - ii** Twice as many people voted for Comedy as voted for Romance.
 - *iii** If 5 people voted for Science fiction, then 20 people voted for Action.



explanation 3

- 6** Sarah and Ashram compared their summer exam marks in the subjects they both do.

	English	Maths	Science	French	History
Sarah	79	50	62	73	71
Ashram	67	70	66	68	69

- a**
- i** What are Sarah's highest and lowest marks?
 - ii** Explain why the range of Sarah's marks is 29.
- b** Explain why Ashram's range of marks is 4.
- c** How does the range tell you that Ashram's marks are much less spread out than Sarah's marks?
- d** Show that the mean of Sarah's marks is 67.
- e** What is Ashram's mean mark?
- f** Which pupil got the highest mean mark?

To find the mean:

- 1** Add up all the values.
- 2** Divide your answer by the number of values.

- 7** The parents of Warren and Claire record how long their children spend doing their homework for a week. Their times, in minutes, are shown in the table.

	Monday	Tuesday	Wednesday	Thursday	Friday
Warren	20	30	25	60	10
Claire	25	40	25	35	30

- a**
- i** What is Claire's modal time?
 - ii** Can you find Warren's modal time?
 - *iii** Explain why the mode is not a good choice of average to compare their times.
- b**
- i** Find the range of homework times for each child.
 - ii** Which child was nearest to spending the same amount of time on homework each day?
- c**
- i** Show that Warren's mean homework time is 29 minutes.
 - ii** Find Claire's mean homework time.
 - iii** Which child has a shorter mean homework time?
- 8** Sian and Chelsea compare their cross-country running times, in minutes, over the last five PE lessons.

Sian	26	27	34	28	35
Chelsea	31	29	25	27	28

- a**
- i** Show that the range of Sian's times is 9 minutes.
 - ii** Find the range of Chelsea's times.
- b** Show that the median running time for both girls is 28 minutes.
- c**
- i** Show that the mean of Sian's times is 30 minutes.
 - ii** Find the mean of Chelsea's times.

