

Collecting data

- Recording continuous data to a suitable level of accuracy
- Preparing grouped frequency tables from lists of data
- Selecting an appropriate class interval for grouping data
- Finding the modal group

Keywords

You should know

explanation 1a

explanation 1b

explanation 1c

- 1** Steve asked some people in his class how many brothers and sisters they have. These are the results.

1 0 2 2 0 1 3
3 1 0 1 1 0 2

- a** Is this an example of discrete data or continuous data?
Explain how you know.
- b** Copy and complete the frequency table.

Number of brothers and sisters	Tally	Frequency
0		
1		
2		
3		
4		

- c** How many people did Steve ask?
- d** What is the modal number of brothers and sisters?
Explain how you know.

- 2** Eugene measured the weights of 20 pupils. These are the results, in kilograms.

56 71 51 62 62 49 59 56 62 73
 38 55 54 67 69 43 51 61 66 59

- a** Is this data discrete or continuous? Explain your answer.
b What is the modal weight?
c Copy and complete the grouped frequency table.

Weight in kilograms	Tally	Frequency
30 up to 40		
40 up to 50		
50 up to 60		
60 up to 70		
70 up to 80		

- d i** Which is the modal group?
ii Compare this with your answer to part **b**. What do you notice?

- 3** Rifat carried out a survey to find how many visits to the cinema each film-club member made in a year. These are her results.

12 5 18 19 14 17 24 12 29 16

- a** Is this an example of discrete data or continuous data? Explain how you know.
b What is the modal number of visits to the cinema?
c Rifat decided to group the data.

Number of visits	Tally	Frequency
5–9		
10–14		
15–19		
20–24		
25–29		

Copy and complete her grouped frequency table.

- d i** Which is the modal group?
ii Compare this with your answer to part **b**. What do you notice?

- 4** These are the times taken by 20 sprinters to run 200 m. Each one is in seconds.

22.5 22.7 23.0 24.0 21.0 22.7 22.9 22.6 24.0 23.2
 23.8 25.8 24.1 22.9 23.1 23.5 22.9 22.6 21.7 23.6

- a** Copy and complete the grouped frequency table.

Time in seconds	Tally	Frequency
21.0 up to 22.0		
22.0 up to 23.0		
23.0 up to 24.0		
24.0 up to 25.0		
25.0 up to 26.0		

- b** Brian says that more than half the sprinters recorded a time less than 23 seconds.

Do you agree? Explain how you can tell from your table.

- 5** These are the heights, in centimetres, of 25 sunflowers in a field.

182 194 201 181 199
 163 102 192 198 173
 152 187 178 122 219
 196 190 209 147 172
 155 181 186 214 192

- a** How high are the shortest and tallest sunflowers?
b What is the range of heights?
c Copy and complete the grouped frequency table.
 Use class intervals of equal size.

Height in centimetres	Tally	Frequency
100 up to 120		
120 up to 140		

6 Here is a list of 16 cities.

The table shows how far each one is from London, in kilometres.

City	Distance from London (km)	City	Distance from London (km)
Barcelona	1139	New Delhi	6711
Buenos Aires	11140	Ottawa	5360
Cairo	3511	Paris	342
Cape Town	9670	Rio de Janeiro	9278
Lisbon	1585	Rome	1433
Los Angeles	8755	Sydney	16993
Moscow	2500	Warsaw	1447
Havana	7491	Wellington	18815

- a** **i** Which city in the table is furthest from London?
- ii** How far from London is this city?
- b** Zac wants to draw a grouped frequency table to show this data.

He decides to use the following class intervals.

340 up to 350 km, 350 up to 360 km, 360 up to 370 km, ...

- i** What size of class interval has Zac chosen to use?
- ii** Explain why Zac's choice of class intervals is not sensible.
- iii** Suggest a better class interval size.
- iv** How many different classes do you need to contain all the cities in the table?
- c** Draw a grouped frequency table for the distances in the table.

