Collecting data

- Preparing grouped frequency tables from lists of data
- Selecting an appropriate class interval for grouping continuous data

Keywords

You should know

explanation 1a explanation 1b online

1 Copy and complete the grouped frequency table for each set of data.

a The masses in kilograms of 20 pupils.

56 71 51 62 62 49 59 56 62 73

38 55 54 67 69 43 51 61 66 59

Mass (kg)	Frequency
$30 \leq M < 40$	
$40 \leq M < 50$	
$50 \leq M < 60$	
$60 \leq M < 70$	
$70 \leq M < 80$	

b The heights in centimetres of a random sample of 30 sunflowers in a field.

182 194 201 181 199 163 102 192 198 173

152 187 178 122 219 196 190 209 147 172

155 181 186 214 192 116 204 159 188 131

Height (cm)	Frequency
$100 \leq H < 120$	
$120 \leq H < 140$	
$140 \leq H < 160$	
$160 \leq H < 180$	
$180 \leq H < 200$	
$200 \leq H < 220$	

2 Copy and complete the grouped frequency table for each set of data.

a The time in seconds taken by 20 sprinters to run 200 m.

22.47 22.71 23.01 23.96 21.03 22.68 22.93 22.55 24.00 23.21
23.84 25.77 24.10 22.89 23.12 23.45 22.88 22.61 21.66 23.57

Time (s)	Frequency
$21 \leq T < 22$	
$22 \leq T < 23$	
$23 \leq T < 24$	
$24 \leq T < 25$	
$25 \leq T < 26$	

b The mass in grams of the marmalade in a sample of twenty 100 g jars of marmalade.

100.38	100.49	100.26	99.82	99.67
100.44	100.36	101.09	100.25	100.39
100.22	99.51	99.82	99.41	100.33
99.56	100.05	100.49	101.27	99.62

Mass (g)	Frequency
$99.0 \leq M < 99.5$	
$99.5 \leq M < 100.0$	
$100.0 \leq M < 100.5$	
$100.5 \leq M < 101.0$	
$101.0 \leq M < 101.5$	

3 The table shows the distance in kilometres of 20 major cities from London.

City	Distance from London (km)
New York	5569
Moscow	2500
Beijing	8137
Sydney	16 993
Lisbon	1585
Paris	342
Barcelona	1139
Rome	1433
Rio de Janeiro	9278
Cairo	3511

City	Distance from London (km)
Cape Town	9670
New Delhi	6711
Riyadh	4951
Helsinki	1821
Warsaw	1447
Havana	7491
Los Angeles	8755
Ottawa	5360
Buenos Aires	11 140
Wellington	18 815

a Construct an appropriate grouped frequency table for the distances in the table.

b Give a reason for your choice of class interval.