Text *E1 Data Collection* Answers

E1.1 Questionnaires and Surveys

1. (a) The questions on the LHS are designed so that the answer to the final question will be 'Yes' whereas the RHS questions are biased to encourage the answer 'No'.

   (b) Perhaps better to state, for example:

   "Meat is one possible source of protein.
   Do you like eating meat?"

2. (a) For example, "Students look smart in school uniform.
   Everyone kows which school you go to if you are in uniform.
   Is having a school uniform a good policy?"

   (b) For example, "Everyone has their own character.
   People can express themselves in the way they dress for school.
   Should school uniform be abandoned?"

3. (a) No; there could be other choices not given in the list that might be the most popular breakfast food.

   (b) Biased question as the choice of responses is limited.

   (c) For example,

   "Which of these foods would be your choice for breakfast?
   Cereal Bacon and Egg
   Porridge Some other choice
   If 'Some other choice', please state what this is:
   ..... "

5. (a) You would observe and record the type of vehicle passing in a period of, for example, an hour.

   (b) The type of vehicle passing could vary considerable according to the time of day.

7. Question (A) gives genuine answers – although they may be difficult to analyse.
   Question (B) will give precise answers to just three aspects of life on this housing development.

8. (a) Athletics and Cycling

   (b) For example, "How many hours each week do you spend on a sporting activity?"

9. (a) The percentage late is given by:

Walk	Car	Cycle	Bus
27%	20%	22%	13%

   so his conclusion is supported by the data.

   (b) Lance could have chosen students randomly; not always used Tuesdays; could have increased the sample size.

   (c) About right - his survey gives the answer as 200 out of 500, that is, $\frac{2}{5}$, but it is from a sample, not the whole Year 7 population.

10. (b) For example, "Do you eat fruit every day?
    Do you eat some vegetables every day?
    Do you eat vegetables other than chips every day?"

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E1.2 Sampling

1. (a) Possible answers: (i) C, F, I, L, O, R, U, X. (ii) D, H, L, P, T, X. (iii) F, L, R, X.

   (c) Number 24 balls and place in a bag, then draw out the relevant number of balls to correspond with the number of machines.

2. 13, 13, 14, 14, 13, 7, 6 (taking the integer part of each answer plus the two greatest remainders to give a sample of size 80)

3. (a) 1, 2, 1, 13, 3. (b) 12

4. (a) No (b) Change 5 to 6 and change 4 to 5.

5. (a) Working either across the rows or down the columns, choose the 10th square in each case.

6. (a) Your sample will not include anyone who does not have a telephone.

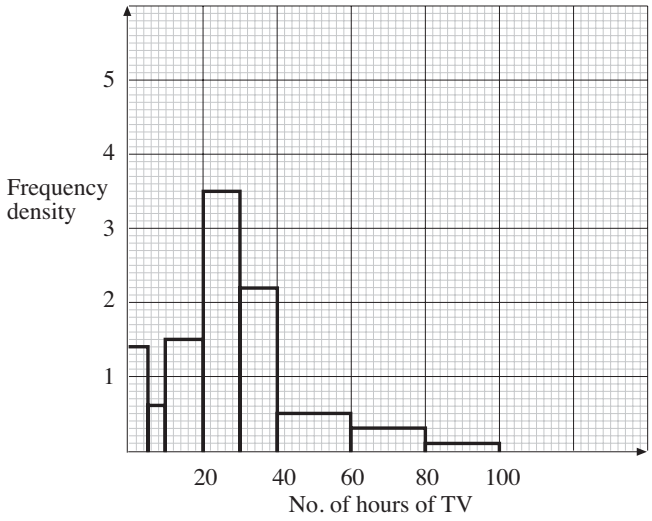
   (b) This is not random.

   (c) This would probably not truly represent, for example, the age profile of the population watching the match.

   (d) This would give a very biased sample - only those who have a car which is coloured red.

8. (a) (i) 49, 36, 15. (ii) This ensures that each age cohort has a fair representation.

   (b)



E1.3 Charts and Tables

1. (a) (i) 172 km (ii) 57 km (iii) 126 km (b) (i) 239 km

   (ii) The travelling distance would be reduced by 43 km because Manchester is 'en route' travelling from Birmingham to Leeds.

   (c) The route via Sheffield (20 km shorter)

2. (a) London Heathrow (179 km) (b) 1060 km (c) 1054 km

   (d) Coventry is 32 km from Birmingham; Dover is 123 km from London Heathrow

3. (a) 10 (b) 11 (c) 'D' grade.

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Text *E1 Data Collection* Answers

E1.3

4. (a) 7 (b) 6 (c) Grades 7, 8, 9 and 11
   (d) (i) Year 10 (ii) 43 students

5. (a) £305 (b) £156 (c) £276 (d) (i) £260 (ii) £45

6. (a)

	Male	*Female*	*Total*
Standard	64	48	112
Senior	20	8	28
Total	84	56	140

   (b) Men are more likely to become senior conductors than women.

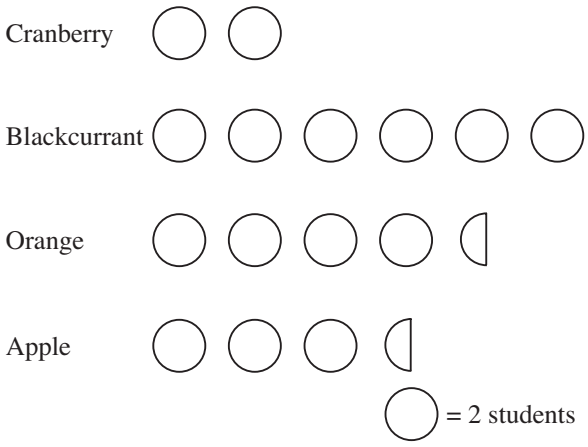
7. (a) 51 (b) 11
   (c) 52 outdoor and 50 indoor shows a roughly even split (only marginally in favour of outdoor sports)

E1.4 Pictograms and Bar Charts

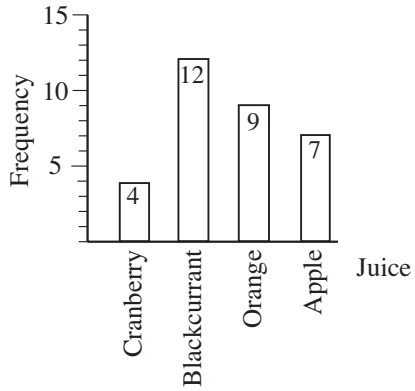
1. (a) 2009 (b) (i) 10 (ii) 7 (iii) 12 (c) 2008

2. (a) 400 (b) 250 (c) 700 (d) $5\frac{1}{2}$ (e) 3300

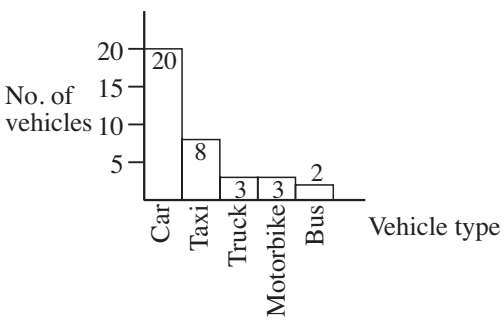
3. (a)



   (b)



4.

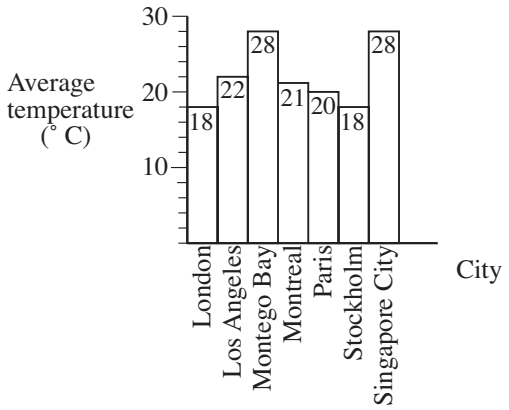


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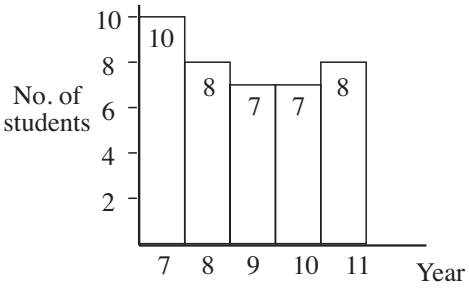
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E1.4

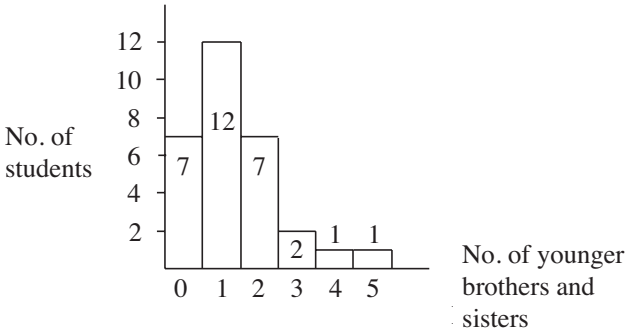
5.



6.



7.



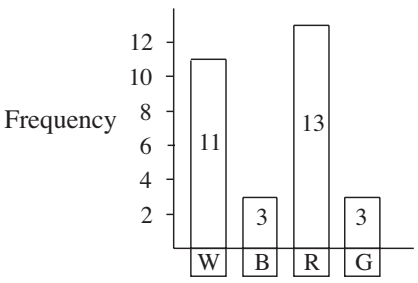
8. (a) 50 (b) 35

9. (a) 23 (b) We would expect there to be many more boys with shoe sizes around 8 and 9 than for 5 or 12, so the results are surprising.

10. (a)

Colour	*Tally*	*Frequency*
White	𝍸 𝍸 I	11
Blue	III	3
Red	𝍸 𝍸 III	13
Green	III	3

(b)



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