



S19-test Bar and Composite Bar Charts: Test Pack

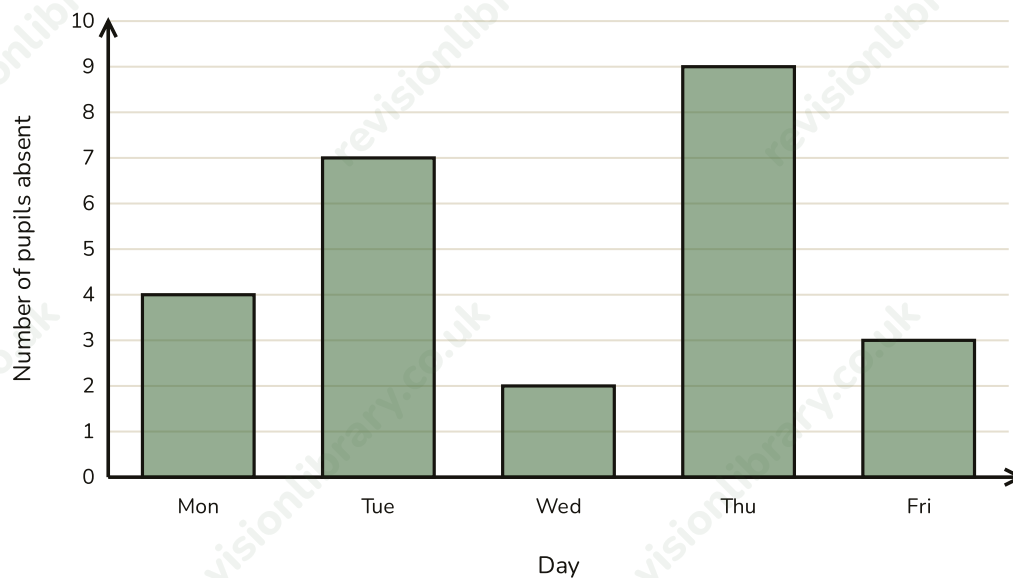
EDEXCEL 1ST0 · Calculator allowed · about 25 minutes

Total Marks

Name: _____ Date: ____ / ____ / ____

Answer ALL questions. Show all your working.

- 1** The bar chart shows the number of pupils absent from a small primary school on each day of one week.



- (a) Write down the number of pupils absent on Thursday. (1)

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- (b) Write down the day on which the fewest pupils were absent. (1)

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- (c) Work out the total number of absences during the week. (2)

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(Total for Question 1 is 4 marks)

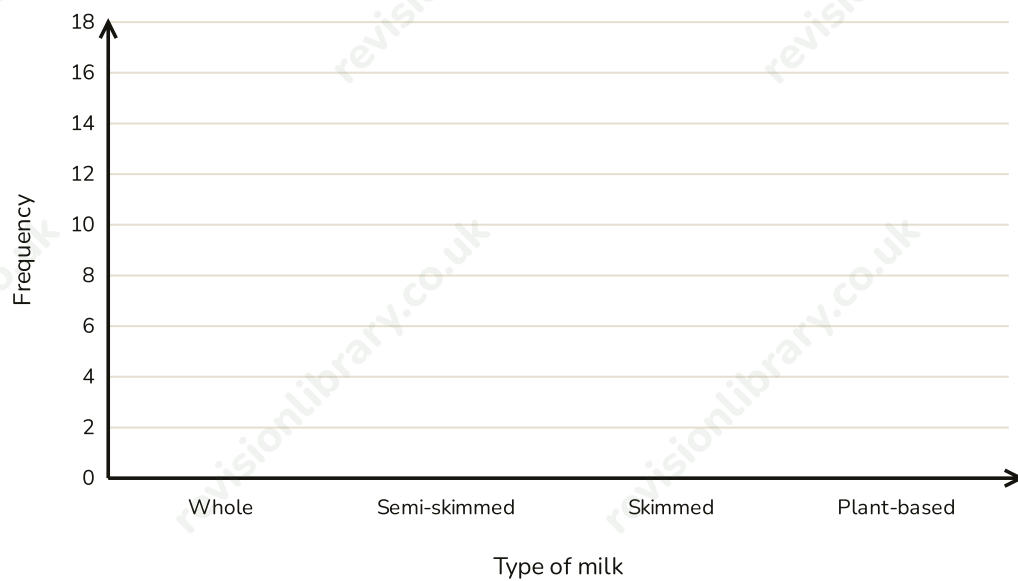
- 2 State the feature that must be true of the gaps left between the bars on a bar chart of categorical data.

(Total for Question 2 is 1 mark)

- 3 40 customers were asked which type of milk they buy most often. The table shows the results.

Type of milk	Whole	Semi-skimmed	Skimmed	Plant-based
Frequency	9	16	6	9

On the grid, draw a bar chart to show this information.



(Total for Question 3 is 3 marks)

4 For each statement about bar charts, write down whether it is True or False.

(i) A composite (stacked) bar chart can show both the total for each category and how that total is split into parts, in a single bar. **(1)**

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(ii) In a composite (stacked) bar chart, all the bars must be drawn to the same total height. **(1)**

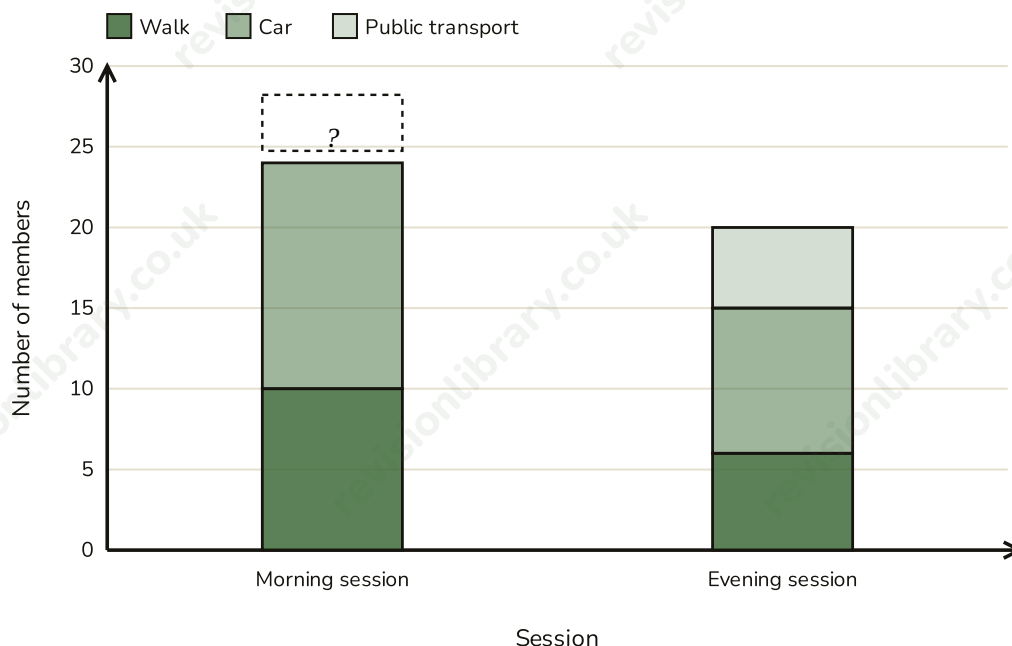
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(iii) A dual (comparative) bar chart, with two separate bars for each category, makes it easy to compare two data sets directly for each category. **(1)**

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(Total for Question 4 is 3 marks)

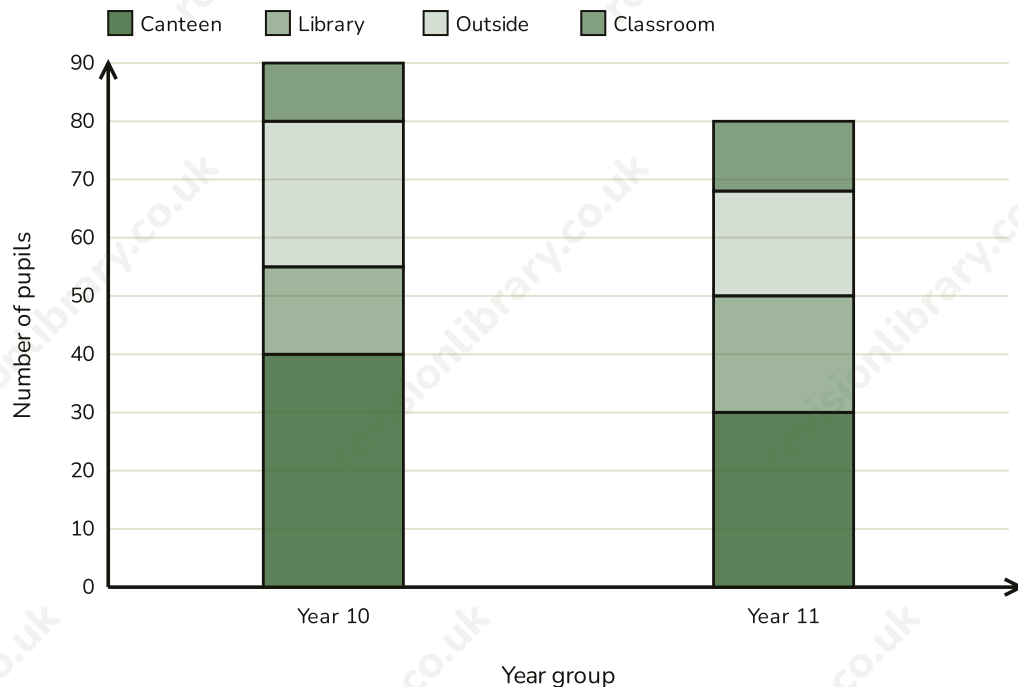
- 5 A survey asked members of a gym how they usually travelled there, split into a Morning session and an Evening session. The composite bar chart shows Walk, Car and Public transport for each session, but the Public transport segment for the Morning session is missing.



- (a) Given that 30 members used the gym in the Morning session in total, work out the number who used public transport in the Morning session. (3)
-
- (b) Write down the number of members who used public transport in the Evening session. (1)
-
- (c) Work out the total number of members who used public transport across both sessions combined. (1)
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(Total for Question 5 is 5 marks)

- 6** A student wants to find out whether Year 10 and Year 11 pupils at her school spend their lunchtime differently, choosing between the Canteen, the Library, Outside, or a Classroom. She plans to survey a sample of pupils from each year group, then display her results as a composite (stacked) bar chart.



- (a) The school has 90 Year 10 and 80 Year 11 pupils. State one suitable method the student could use to choose her sample, and give one reason to avoid bias when doing so. (2)
- (b) Give one reason why a composite (stacked) bar chart is a suitable way to display this data. (1)
- (c) Write down the number of Year 11 pupils who spend lunchtime in the Library. (1)
-
- (d) Work out the total number of Year 10 pupils surveyed. (2)
-
- (e) The student concludes: "Year 10 pupils are more likely to eat in the Canteen than Year 11 pupils." Use the chart to work out the proportion choosing the Canteen in each year group, and state whether her conclusion is supported. (3)

(Total for Question 6 is 9 marks)

Mark scheme · S19-test Bar and Composite Bar Charts: Test Pack

Question 1

- (a) **B1** 9 cao
- (a) **Answer: 9**
- (b) **B1** Wednesday cao
- (b) **Answer: Wednesday**
- (c) **M1** $4 + 7 + 2 + 9 + 3$, oe (adds all five frequencies)
- (c) **A1** 25 cao
- (c) **Answer: 25**

Question 2

- **B1** equal gaps must be left between the bars cao
- **Answer: Equal gaps must be left between the bars.**

Question 3

- **B1** a suitable uniform scale chosen on the frequency axis, starting at 0
- **B1** all four bars drawn to the correct height: Whole 9, Semi-skimmed 16, Skimmed 6, Plant-based 9 ($\pm$ half a small square)
- **B1** chart fully labelled, with both axes labelled and equal gaps left between bars
- **Answer: Bar chart with bars of height 9 (Whole), 16 (Semi-skimmed), 6 (Skimmed), 9 (Plant-based).**

Question 4

- (i) **B1** True cao
- (i) **Answer: True**
- (ii) **B1** False cao
- (ii) **Answer: False**
- (iii) **B1** True cao
- (iii) **Answer: True**

Question 5

- (a) **M1** $10 + 14$ ($= 24$), oe (adds the two known segments)
- (a) **dM1** $30 - 24$ (dependent on the first method mark)
- (a) **A1** 6 cao
- (a) **Answer: 6**
- (b) **B1** 5 cao
- (b) **Answer: 5**
- (c) **B1** 11 ft, from $6(a) + 5(b)$
- (c) **Answer: 11**

Question 6

- (a) **B1** a valid sampling method, e.g. a random sample using pupil ID numbers, or a systematic sample from the school register
- (a) **B1** a valid reason to avoid bias, e.g. sample from both year groups in proportion to their size rather than only asking friends, so the sample represents the whole school
- (a) **Answer: Take a random sample (e.g. using pupil ID numbers) from each year group, in proportion to its size, rather than just asking friends, to avoid a biased sample.**
- (b) **B1** it shows each year group's total surveyed (bar height) and how that total splits across the four locations (segments), together in one chart
- (b) **Answer: It shows each year group's total and its split across the four lunchtime locations in a single chart.**
- (c) **B1** 20 cao
- (c) **Answer: 20**
- (d) **M1** $40 + 15 + 25 + 10$, oe
- (d) **A1** 90 cao
- (d) **Answer: 90**
- (e) **M1** Year 10 proportion: $40/90$ ($= 0.444\dots$, awrt 44%)
- (e) **M1** Year 11 proportion: $30/80$ ($= 0.375$, 37.5%)
- (e) **C1** correct conclusion consistent with the two proportions: yes, supported, since $44\% > 37.5\%$
- (e) **Answer: Yes, supported: 40/90 is about 44% for Year 10, compared with 30/80 = 37.5% for Year 11.**