

Selecting appropriate displays



Name each display below, then choose the best display for each scenario and justify your choice.

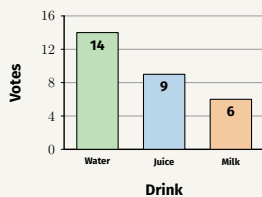
Name _____

Date _____

Matching data to a display

Categories suit a bar graph or pie chart. Change over time suits a line graph (time series). Grouped continuous numbers suit a histogram. Small sets of individual whole-number values suit a dot plot. A pictogram uses repeated icons for a count. A scatter plot shows the relationship between two numerical variables. A box-and-whisker graph shows the five-number summary.

Worked example Name this display, and describe the kind of data it is best suited to show.



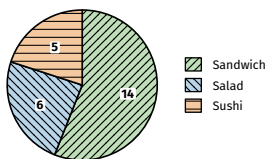
Bar graph.

Favourite drink is categorical data – Water, Juice, and Milk are separate, unordered groups.

The gap between each bar shows the categories are separate; the height of each bar shows its frequency.

1. Name this display, and describe the kind of data it is best suited to show.

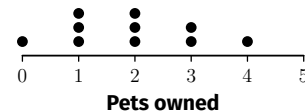
Solution: Pie chart – shows proportions of a whole (favourite lunch item).



Working

2. Name this display, and describe the kind of data it is best suited to show.

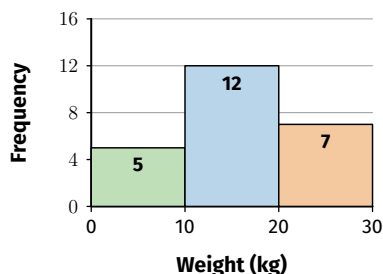
Solution: Dot plot – shows individual small whole-number values (pets owned by each student).



Working

3. Name this display, and describe the kind of data it is best suited to show.

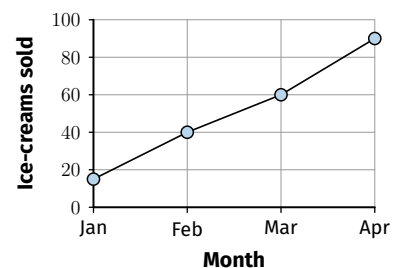
Solution: Histogram – shows continuous data (parcel weights) grouped into equal intervals, so the bars touch.



Working

4. Name this display, and describe the kind of data it is best suited to show.

Solution: Line graph (time series) – shows how a value (monthly ice-cream sales) changes over time.



Working

Selecting appropriate displays (continued)



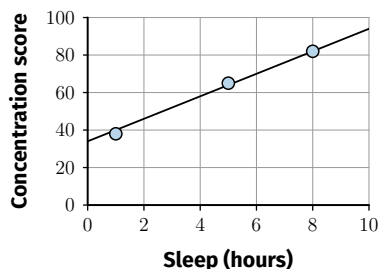
Name each display, then choose the best display for each scenario and justify your choice.

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Date _____

5. Name this display, and describe the kind of data it is best suited to show.

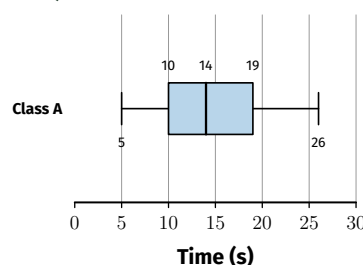
Solution: Scatter plot – shows the relationship between two numerical variables (sleep hours, concentration score).



Working

6. Name this display, and describe the kind of data it is best suited to show.

Solution: Box-and-whisker graph – shows the five-number summary (minimum, Q_1 , median, Q_3 , maximum).



Working

7. Name this display, and describe the kind of data it is best suited to show.

Solution: Pictogram – shows counts (medals won) using rows of repeated icons.



Working

8. Choose the best display for the favourite lunch option in a class, and justify your choice.

Solution

Bar graph or pie chart – favourite lunch option is categorical data.

9. Choose the best display for the temperature inside an oven as it preheats, taken every 30 seconds, and justify.

Solution

Line graph – temperature measured at regular short time intervals is continuous data over time.

10. Choose the best display for the lengths of river fish grouped into 5 cm intervals, and justify.

Solution

Histogram – equal-width numerical intervals are continuous data with no gaps between bars.

Selecting appropriate displays (continued)

Choose the best display for each scenario, and justify your choice.



Name _____

Date _____

11. Choose the best display for the exact number of goals scored by each player in a small team, and justify.

Solution

Dot plot – keeps every individual whole-number value visible.

12. Choose the best display to compare the median and spread of two classes' spelling test scores, and justify.

Solution

Box-and-whisker graph (two box plots) – shows the median and IQR of each class side by side.

13. Choose the best display to see whether there is a relationship between screen time and hours of sleep, and justify.

Solution

Scatter plot – compares two numerical variables to look for a relationship.

14. A student uses a pie chart to show the rainfall each month for a year. Explain why this is a poor choice, and name a better display.

Solution

A pie chart shows proportions, not change over time; a line graph shows the monthly trend.

15. A student says a bar graph and a histogram are the same thing. Give one difference between them.

Solution

A bar graph has gaps between bars (categories); a histogram's bars touch (continuous scale).

16. Choose the best display for the sale price of a car recorded every month for three years, and justify.

Solution

Line graph – monthly car price over three years is a long time series showing the trend.