



Comparing box-and-whisker graphs - CSSI

Mana Maths

Te reo Māori terms



pouaka

box

Open in Te Aka

pahau

whisker/beard

Open in Te Aka

takawaenga

median

Open in Te Aka

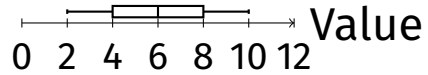
awhe

range

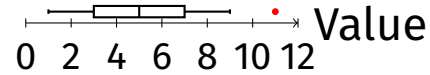
Open in Te Aka

Comparing box-and-whisker graphs - CSSI — Foundation

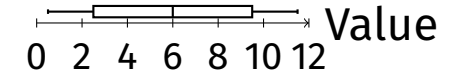
1. Describe the box-and-whisker graph using CSSI.



2. Describe the box-and-whisker graph using CSSI.



3. Describe the box-and-whisker graph using CSSI.



4. Identify the Centre (median) for each boxplot above.

5. Identify the Shape (skewness) for each boxplot above.

6. Identify the Spread (IQR, range) for each boxplot above.

7. Identify any Interesting features (outliers, groups) for each boxplot above.

8. What does CSSI stand for?

9. Match each letter of CSSI with its meaning.

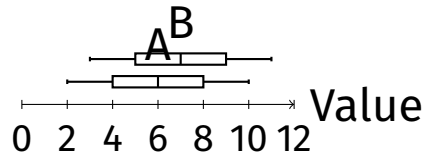
10. Given a box-and-whisker graph with a median around 6 and IQR from 4 to 8, describe the centre and spread.

11. Given a box-and-whisker graph with a long upper whisker, describe the shape.

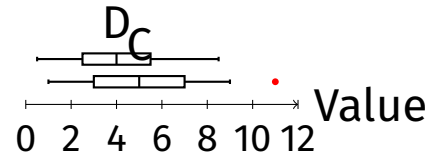
12. Given a box-and-whisker graph with an outlier at 12, describe the interesting feature.

Comparing box-and-whisker graphs - CSSI — Proficient

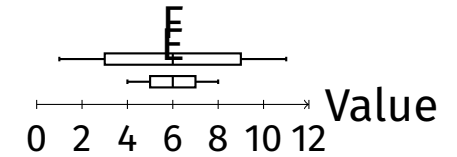
1. Compare the two box-and-whisker graphs using CSSI.



2. Compare the two box-and-whisker graphs using CSSI.



3. Compare the two box-and-whisker graphs using CSSI.



4. For each pair of box-plots, compare the centres.

5. For each pair of box-plots, compare the shapes.

6. For each pair of box-plots, compare the spreads.

7. For each pair of box-plots, compare any interesting features.

8. Which pair shows the greatest difference in centre? Explain.

9. Which pair shows the greatest difference in spread? Explain.

10. Which pair shows a clear outlier? Describe its effect on the comparison.

11. Which pair shows a skewed distribution? Describe the skewness.

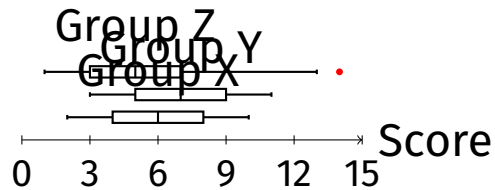
12. Explain how you can tell from a boxplot whether the distribution is symmetric or skewed.

13. Explain the difference between IQR and range in the context of boxplots.

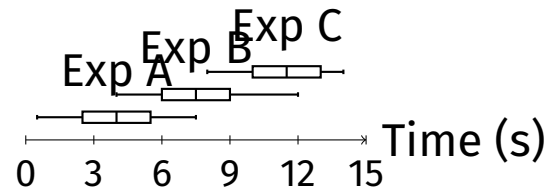
14. Explain how outliers are determined in a boxplot.

Comparing box-and-whisker graphs - CSSI — Excellence

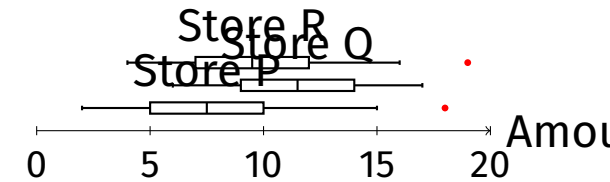
1. Analyse the three box-and-whisker graphs using CSSI and write a comparative paragraph.



2. Analyse the three box-and-whisker graphs using CSSI and write a comparative paragraph.



3. Analyse the three box-and-whisker graphs using CSSI and write a comparative paragraph.



4. For each set of three boxplots, write a full comparative analysis using CSSI.

5. Identify which group/experiment/store has the highest median and explain its significance.
6. Identify which group/experiment/store has the largest spread and explain its implications.

- 7.** Identify any outliers and discuss their possible causes and effects on the data.
- 8.** Discuss the shape of each distribution and what it suggests about the underlying data.
- 9.** Compare the IQRs of the groups and discuss what this tells you about the variability within each group.
- 10.** If you could only use one measure of centre and one measure of spread to compare these groups, which would you choose and why?
- 11.** Suggest possible real-world contexts that could produce each set of boxplots.
- 12.** Critique the use of boxplots for comparing these datasets. What are the limitations?
- 13.** Propose a follow-up investigation based on the patterns you observed in the boxplots.