

Misleading graphs



Look for the axis baseline, the axis-break symbol, and area distortion.

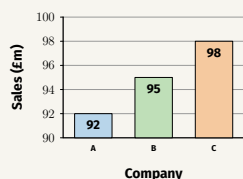
Name _____

Date _____

Spotting a misleading graph

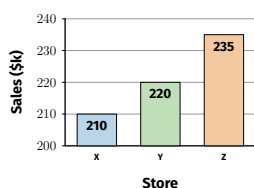
A good graph has: a good title, clearly labelled axes (with units), simplicity, clear data points, and an uninterrupted (zero-baseline) axis. Watch for a **truncated axis** (doesn't start at 0 – exaggerates differences) and **area distortion** (an icon's width and height both scale with value, so its area grows much faster than the true value).

Worked example This graph compares three companies' sales. Explain why it's misleading.



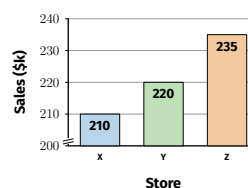
The y-axis starts at 90, not 0, with no break symbol.
The true difference (92 to 98, about 6%) looks huge because it fills the whole plot.

1. Explain why this graph is misleading. Use the actual sales figures.



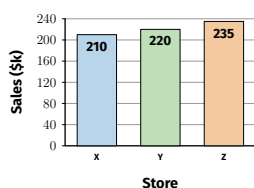
Working

2. This is the same data with a break symbol. What does the symbol warn readers about?



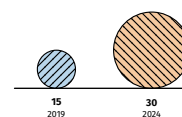
Working

3. Redraw this comparison honestly (in your head): describe how different the bars would really look.



Working

4. Why is this pictogram misleading, even though each icon's label is correct?



Working

Misleading graphs (continued)

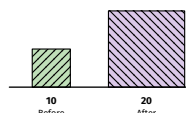


Look for the axis baseline, the axis-break symbol, and area distortion.

Name _____

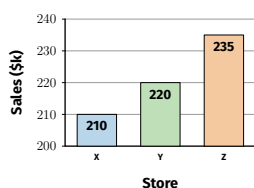
Date _____

5. A symbol's width and height both double for a doubled value. By what factor does its area actually grow?



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7. Calculate the true % difference between the smallest and largest bars in Question 1.



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6. List the five features every good, honest graph should have.

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8. Design your own truncated-axis graph idea (without drawing). Describe the data and the misleading impression it would create.

Working
