Evaluating graphs and statistical claims

Learn and practise | Free preview

A sample from this topic. The complete topic collection contains three different resources and worked solutions.

Show your thinking using words, working or a labelled drawing. Use the explanations and example first.

What you will practise

• Evaluating graphs and statistical claims

• Explain and check an answer with an appropriate representation.

Useful starting skills: Use objects, drawings or a number line to explain a simple idea.

A statistical claim needs context:who or what was measured, how data was collected, how many observations were made, and when. Compare a headline with the evidence it actually describes.

Inspect axis scales, missing categories, summary measures and sample selection. A graph can use correct numbers but still encourage an exaggerated impression. Associations also need care when several conditions differ.

Worked example

A graph shows values 48 and 52 with a baseline at 46. What should a reader check?

The actual increase is 52-48=4.

Visible bar lengths are 2 and 6, so the cropped picture can overstate the relative difference.

Answer: Use the values and scale, not bar height alone

Try it yourself

Name: _____ Date: _____

1. A fictional news graphic draws bars for 96 and 102 members from a vertical baseline of 90. Why might it exaggerate the change?

Year	Club members
Last year	96
This year	102

2. A poll of 20 volunteers from one chess club says “All local children prefer chess.” What is the problem?

Answers and explanations

Check the method as well as the final answer. An alternative correct method is also valid.

1. The visible bar lengths are 6 and 12, although membership rose by only 6

A truncated baseline makes the later bar look twice as tall. Compare the actual counts and scale.

2. The sample is small and drawn from a group already interested in chess

The conclusion extends beyond the people surveyed and ignores selection bias.

Curriculum reference: VC2M6ST02

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