

Critically evaluating graphs and misleading data

MODULE 9 · DATA AND CHANCE DATA & CHANCE

HOW TO ANSWER TODAY

- **Read a bar chart.** Read the top of each bar. Check the y-axis scale to see what each grid line is worth.
Each grid line = 5, bar reaches the 4th line → value is 20
- **Pie chart.** A full circle = 360° . A segment's angle $\div 360^\circ$ gives its fraction; multiply by 360° to go the other way.
- **Y-axis scale.** Pick a step that makes the tallest bar fit but isn't so small the chart is huge.
Tallest = 75 → use steps of 10 (about 8 grid lines), not 1 (75 lines)

★ STRETCH PROBLEMS

- 1 Tadhg's 6th class ran a fruit stall at the school fair. Their bar chart of pieces sold shows Apple **10**, Pear **21**, Orange **9**, Banana **17** and Plum **25**. By how much does the Apple bar differ from the Banana bar?
- 2 6th class look at a pie chart of their reading scores from weekly tests over the term. One segment is **99°** and another is **88°** . What is the angle of the third segment, remembering the whole circle is **360°** ?
- 3 Aoife drew a pie chart of the points scored by three teams at the Cumann na mBunscol hurling blitz. One team's segment is **68°** and another's is **101°** . What is the angle of the third team's segment if the whole circle is **360°** ?
- 4 Cara draws a pie chart of the books read by each child in the October challenge. One segment is **150°** and another is **63°** . What is the angle of the third segment if a full circle is **360°** ?
- 5 Saoirse is drawing a bar chart to show the pocket money 6th class saved over the half-term. The largest bar will be **27**. Which sensible y-axis step should she choose from **1**, **5** or **10** so the chart shows about **5** to **10** grid lines from **0** to the top?

● INVESTIGATE

Spot the misleading graph

Draw the same data twice: once fairly, and once in a way that **exaggerates** a small difference (try chopping the axis). Explain the trick you used and how a careful reader would catch it.



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