

Bar charts with a scale of two

CURRICULUM ALIGNMENT

DAT.DAT.3

pose questions of interest and collect, display and critically analyse data in a range of ways for a range of purposes and communicate the findings.

INTERACTIVES [Bar Chart Builder · challenge, display, explore](#)

WHAT THIS LESSON TEACHES

A bar chart with a scale of two has side marks labelled 0, 2, 4, 6 and 8. Each step counts two, and a bar halfway between marks shows the odd number in between.

→ A bar at the 6 mark shows 6.

→ A bar halfway between 6 and 8 shows 7.

MODEL THIS ON THE BOARD

READING BARS ON A SCALE OF TWO

- 1 Read the scale marks up the side: 0, 2, 4, 6, 8.
- 2 Find the bar for pencils. It reaches exactly the 4 mark.
- 3 The pencils bar shows 4.
- 4 Find the bar for books. It stops halfway between the 6 and 8 marks.
- 5 Halfway between 6 and 8 is 7, so books show 7.

DISCUSSION STARTER

REFLECT How can you tell an odd count when the scale goes up in twos?

LESSON ARC

Open with a chart whose tallest bar runs off the top of the page and ask what to change about the side numbers. On Watch and Notice, rebuild the scale climbing in twos and count the marks aloud in unison. The key moment is the Car bar stopping between the 6 and 8 marks: it shows 7. Pupils sketch a scale-of-two and a between-marks bar in copy, then work four bars together and predict and build the Class Challenge bars.

TEACHING MOVES

1. **Getting Started.** Show the off-the-page chart and take three hands-up answers, not open call-outs. Steer toward 'count up the side in twos' but don't confirm it — leave the reveal for Watch and Notice.
2. **Watch and Notice.** Point at each scale mark and count aloud in twos with the class — two, four, six, eight, ten, twelve. Trace the Walk bar to 8 and the Bus bar to 10, then stop dead on the Car bar and ask 'which two marks is this bar sitting between?' before anyone names 7.
3. **Sketch the scale of two in your copy.** Walk the room glancing that scale marks are evenly spaced and the '7' bar lands genuinely halfway between the 6 and 8 marks, not nudged onto either mark. No marking — this is practice, not assessment.
4. **Try It Together.** Work the four bars aloud with pupils taking turns at the board. Do the on-mark bars (4, then 10) first, then before the between bar ask 'on a mark, or between two marks?' Keep asking that same question every single bar.

5. **Class Challenge.** Brisk predict-and-build round — pupils build each bar, class confirms, move on. Before the 9 and 11 bars, ask the class to predict 'on a mark or between?' Watch for pupils snapping the in-between bar onto the nearest mark instead of stopping halfway.
6. **What Did We Notice?** Revoice a strong answer: 'a bar halfway between six and eight has to be seven, because seven is the number in between.' Head off any 'round it to the nearest mark' thinking — a between-marks bar is exact.

COMMON MISCONCEPTIONS

⚠ Pupils read a bar halfway between the 6 and 8 marks as 6 or 8 — they snap it to the nearest mark instead of reading the odd number.

Ask 'is this bar on a mark, or between two marks?' before they answer. Trace a finger up the bar on the IWB and show it stops halfway — it isn't touching either mark, so it's the number in between, seven.

⚠ Pupils count the scale marks as ones — reading a bar at the 8 mark as 'four' because it's the fourth step up.

Count the marks aloud with the class in twos, tapping each one — two, four, six, eight. Make them say the value at the mark, not its position, before reading any bar.

DIFFERENTIATION

EMERGING

- Keep this group on the on-mark bars only (4, 10) while the class tackles the in-between ones; read the mark value aloud together first.
- In the copybook sketch, pre-count the scale aloud with them so they write 0, 2, 4, 6, 8 before attempting a bar.

DEVELOPING

- After the four bars, ask them to read a between-marks bar you haven't named yet — say, halfway between 2 and 4 — and justify why it's 3.
- Extend the scale to 14 and 16 and have them read a bar landing between 12 and 14.

PROFICIENT

- Pose: 'a bar sits between two marks and shows 5 — which two marks is it between? Now what if the scale climbed in fives instead of twos?' Let them work it in copy and predict how a between-marks bar would read then.

↗ **Cross-curricular:** Tie to the data strand of a class survey — pupils tally favourite GAA counties, then read the tall bars off a scale-of-two chart so they fit the page.

ANSWER KEY

Scaffold: visual check on the page

Q1: 4

Q2: 2

Q3: 8

Q4: 11

a) Always : The mark is labelled 4 so the bar shows exactly 4.

b) Always : Halfway between two even marks is the odd number in the middle.

c) Never : The 2 mark means the value 2, not 1.

d) Always : The marks are even so halfway points are always odd.

EXTENSION SHEET · STRETCH ANSWERS

S1: 13

S2: Halfway between the 16 and 18 marks

S3: 5

S4: 15. The marks go up in twos, and the number halfway between 14 and 16 is 15.

S5: 6 and 12 stop on a mark. 9 and 15 stop halfway between two marks.

Investigation: When one square means two — open-ended; scan pupils' working for valid solution paths rather than a single answer.