

Constructing and interpreting bar and multiple bar charts

CURRICULUM ALIGNMENT

DAT.DAT.4a

pose questions, collect, compare, summarise and represent data selectively to answer those questions.

DAT.DAT.4b

critically analyse and evaluate findings; and communicate inferences, conclusions and implications from the findings.

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

WHAT THIS LESSON TEACHES

A multiple bar chart shows two groups side by side for each category so you can compare them on one set of axes.

- Two bars for each travel choice - one for 6th Class, one for 5th Class - sitting beside each other for walk, cycle and car.
- Going up in 5s: 0, 5, 10, 15, 20 when the biggest count is around 18.

MODEL THIS ON THE BOARD

BUILDING A MULTIPLE BAR CHART FOR TRAVEL DATA

- 1 Draw the axes and label the categories walk, cycle and car along the bottom.
- 2 Choose a scale going up in 5s to 30 and mark it on the side.
- 3 Draw two bars side by side for each category using the numbers 18 and 22 for walk, 9 and 14 for cycle, 15 and 12 for car.
- 4 Add a key to show which colour is 6th Class and which is 5th Class.

LESSON ARC

Open with a single-group bar chart on the IWB and ask how you'd squeeze a second class onto the same axes. Watch and Notice walks the favourite-sports chart, then the two-class lunch chart — finger-tracing the gap between each pair of bars to name the biggest difference as a category. Pupils build the travel-to-school multiple bar chart together on the bar-chart-builder, then sketch it in their copy with a scale and key. Class Challenge works four charts, ending on before-and-after data.

TEACHING MOVES

1. **Getting Started.** Display the single-group bar chart as pupils settle and ask how to fit two classes on one set of axes. Take only two or three hands — don't reveal the answer. When someone says 'two bars beside each other', revoice it warmly and park it for the next step.
2. **Watch and Notice.** Trace your finger up the gap between each pair of bars — art (gap 1), drama (gap 2), coding (gap 9) — and ask which gap is biggest. Revoice that the biggest difference names a category, coding, not a group. Point to the key and ask 'which colour is which class?' so pupils see the key is the only way to tell.
3. **Try It Together.** Start from the empty grid on the bar-chart-builder and build the 6th Class bars first, then the 5th Class series, so the pairing builds up visibly. Before confirming each bar, make the class read its height off the scale. Rotate three or four pupils to the board and point back to the key when someone reads the wrong colour.

4. **Sketch the Chart in Your Copy.** Walk the room glancing at scale steps, side-by-side pairing and whether a key is present. Many pupils forget the key entirely — a quiet desk prompt is enough. This is copybook practice, not marking.
5. **Class Challenge.** Brisk board work — pupils build each chart, read it, then the class checks before moving on. Say the distinction out loud: charts one to three ask 'which category do the two groups differ most in?'; the final before-and-after chart asks 'which subject changed most?' because it's one group measured twice.
6. **What Did We Notice?.** Ask why a multiple bar chart needs a key when a single one doesn't. Listen for 'the key tells the colours apart' and revoice 'the key turns coloured bars into named groups.' For the second prompt, push for 'the gap between the two bars' rather than 'the tallest bar'.

COMMON MISCONCEPTIONS

⚠️ Asked where two classes differ most, pupils point to the tallest single bar — 'car is biggest, so it's car' — instead of comparing the gap between each pair.

Go back to the lunch chart and trace the gap between both bars at each category with your finger. Show a category where both bars are tall but level (small gap) versus one where they're far apart. The biggest difference is the widest gap, not the tallest bar.

⚠️ Reading a bar, pupils name the wrong group — they read the orange bar's height but call it 6th Class. Stop and point back to the key every time. Have the pupil say the colour aloud, then check the key, then say the group name before reading the height. Make the colour-to-group step a spoken routine.

⚠️ For the before-and-after chart, pupils treat the two bars as two different groups and answer 'which group has more' instead of 'which changed most'.

Say it out loud: this is one group measured twice, not two classes. The gap now means change, not difference between groups. Re-read the key labels — 'before' and 'after', not two class names.

DIFFERENTIATION

EMERGING

- Pre-draw the axes and scale steps in the copybook so pupils only place and colour the bars, then add the key.
- On the bar-chart-builder, keep this pupil reading off one pair of bars at a time rather than scanning the whole chart for the biggest gap.

DEVELOPING

- After the copybook sketch, ask pupils to circle the category with the biggest gap and write the gap as a number (e.g. 'car: $12 - 8 = 4$ ').
- Give the travel data with one count missing and the total known, so pupils work back to the bar height before drawing it.

PROFICIENT

- Pose at the board: 'design a third class's travel data so that cycle becomes the biggest difference instead of car — explain your numbers.'
- Pull fast finishers ahead into the Student Activity Book page while the class finishes the Class Challenge.

✂️ **Cross-curricular:** Tie to Geography — survey how 5th and 6th Class travel to school, then build a real multiple bar chart of walk, cycle and car for your own corridor.

ANSWER KEY

Scaffold: visual check on the page

Q1: Walk: 18 (6th), 22 (5th); Cycle: 9 (6th), 14 (5th)

a) **Always** — You need the key to tell the two groups apart when bars are side by side.

b) **Always** — The biggest gap between paired bars shows the largest difference for that category.

c) **Sometimes** — It can show two or more groups but two is common in these lessons.

d) **Never** — It is possible for the groups to match on all categories.

EXTENSION SHEET · STRETCH ANSWERS

S1: step of 10

S2: step of 10

S3: step of 10

S4: step of 5

S5: step of 5