

What does our class look like?

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 · display, explore

WHAT THIS LESSON TEACHES

A bar chart shows how often each category occurs by the height of its bar, with categories along the horizontal axis. The same class data can also be drawn as a pie chart and summarised with mean, median, mode and range.

→ A bar for Walk reaching 15 tells us 15 pupils walk to school.

→ If half the class walks to school, the Walk slice fills half the circle (180°).

MODEL THIS ON THE BOARD

5TH CLASS TRAVEL CHART

- 1 Read the bar chart of how the class gets to school.
- 2 The Walk bar reaches **15**, so **15** pupils walk.
- 3 Bus reaches **9**, Car reaches **6** and Bike reaches **3**.
- 4 The tallest bar is Walk, so the mode is Walk.
- 5 Range of the counts is **15** minus **3**, which is **12**.

LESSON ARC

Settle on one class question by hands-up vote at the front. Show the worked school-travel data as bar and pie side by side on the interactive, pointing out the same category wins in both. Run a live hands-up tally, draw two bars at an agreed y-step, then build the count-to-slice step on the board (14/28 → 180°). Pupils sketch a three-box poster layout in copy, then build their own poster at their desks — bar chart and headline first.

TEACHING MOVES

1. **Getting Started.** Take exactly three hands-up suggestions, not open call-outs, and lock in one class question now so Try It Together opens straight into tallying. Steer hard toward three-to-five categories — pets, sport, how you travel — because a question with too many categories wrecks the pie chart.
2. **Watch and Notice.** Point to the tallest bar (Walk, 15) then the biggest slice and say 'the same category wins in both'. Draw the difference out loud: the bar gives the exact count, the slice gives the share. Jot the mode (Walk) and range (15 - 4 = 11) on the board, but hold the pie method back for the next step.
3. **Try It Together.** Run a quick hands-up tally for the agreed question, write each count up, and ask the class which y-step reads best (usually 2 for about 28 pupils). Then build the count-to-slice step visibly: write 14/28, say 'half the circle', shade 180°, repeat with 7/28 → 90°. Stress this is a tidy example — their real class total won't be exactly 28, so they divide by their own number.

4. **Sketch Your Poster Layout in Your Copy.** Walk the room glancing that every copy has three boxes plus a centre headline — this is a layout sketch, not the finished chart. Redirect anyone who has started drawing full bars inside a box: 'boxes now, real charts on the poster'.
5. **Class Challenge.** Keep this brisk — pupils build their own poster at their desks while you circulate, not a re-teach. Enforce the floor: bar chart and headline sentence done first, then pie and summary panel if there's time. Nudge less-secure pupils to use the class data rather than invent their own.
6. **Record the Headline.** 60 seconds of circulating, glancing that each journal headline is a full sentence with a number in it — not just a bare category name like 'Walk'. One line into the paper journal only.
7. **What Did We Notice?.** Press for which chart suits which question rather than which is 'better'. Revoice a strong answer: 'so if the question is how many, the bar wins; if it's what share, the pie wins.' Head off any 'one chart is just better' claim.

COMMON MISCONCEPTIONS

⚠ Pupils draw every pie slice the same size — 'four ways to travel, so four equal quarters' — regardless of the counts.

Stop at the board and put the counts beside the slices: Walk 15 is far bigger than Cycle 4, so its slice must be far bigger. Rebuild the 14/28 → half-circle example so they see the slice size follows the count, not the number of categories.

⚠ When turning a count into a slice, pupils divide by 28 out of habit even though their real class total is, say, 26.

Write the class's actual total large on the board and box it. Each slice is 'this count over OUR total' — point back to the boxed number every time a pupil asks about a slice.

⚠ Pupils write a headline that is just a category name — 'Walking' — rather than a finding.

Ask 'what does that tell a visitor?' and model turning it into a full sentence with a number: 'More than half of 5th Class walk to school.' A headline needs a number and a verb.

DIFFERENTIATION

EMERGING

- Point these pupils back to the board example and let them copy the bar-chart structure with their own counts — same layout, their numbers.
- Give them just the bar chart and headline as the whole task; the pie chart is optional, not expected today.

DEVELOPING

- After the bar chart, have them find one more slice beyond their first, so they practise the count-over-total method twice.
- Ask them to add all four summary stats to the panel and check the mode matches their tallest bar.

PROFICIENT

- On the poster, have them write one sentence on whether the data is evenly spread or bunched into one big category, using the range to back it up.
- Pull them ahead: pose a second class question of their own and predict which chart would suit it before drawing anything.

✓ **Cross-curricular:** Tie to Geography — survey how the class travels to school and link the walk/cycle share to a local safe-routes or active-travel discussion.

ANSWER KEY

Scaffold: visual check on the page

Q1: 4

Q2: Sandwich

Q3: 10

Q4: 8

a) Always : The mode is the most frequent category, and that is the tallest bar.

b) Always : Half of 360° is 180° , so the slice and the class share are both one half.

c) Never : Range is tallest minus shortest, never the sum of those two heights.

d) Sometimes : Some surveys have four choices, but a survey can have any number of categories.

EXTENSION SHEET · STRETCH ANSWERS

S1: 30.5

S2: 143

S3: 9

S4: 23

S5: 36