

Posing a question and tallying the data

CURRICULUM ALIGNMENT

DAT.DAT.4a

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

INTERACTIVES

Tally Chart · challenge, display, explore

Pictogram Builder · display

WHAT THIS LESSON TEACHES

A good data question can be settled by counting items into clear categories. We record counts with tally marks and cross every fifth mark into a gate so totals are quick to read.

→ How do pupils in our class get to school? Categories are Walk, Cycle, Bus, Car.

→ 12 marks equal two full gates of five plus two single strokes.

MODEL THIS ON THE BOARD

READING TALLY MARKS

- 1 The clipboard shows three full gates of five, then two more single strokes.
- 2 Each gate is worth 5, so three gates make **15**.
- 3 Add the two single strokes: **15 + 2 = 17**.
- 4 The tally total is **17**.

LESSON ARC

Open with the clipboard tally on the IWB — three gate-bundles plus two singles — and take hands-up for the total (17). Sort three sample questions into countable versus prediction. Model gate-marks slowly on a Walk/Cycle/Bus/Car chart, chanting five-ten-fifteen as each gate closes, then time loose strokes against a gated row. Pupils draft a playground-games question together at the board, write their own question, categories, gates and frequencies in copybook, then run a two-minute window tally and read frequencies back as a class.

TEACHING MOVES

1. **Getting Started.** Take three hands-up answers for the clipboard tally — the total is 17 — then put the three questions to the class. Steer hard toward which one we can settle by counting into categories; name the rain question as a prediction, not a count, and keep the beat under three minutes.
2. **Watch and Notice.** Draw four straight strokes counting one-two-three-four, then say GATE as the diagonal fifth closes it. Point at each gate and have the class chant five, ten, fifteen before adding spare strokes. Finish with six loose strokes timed against a gated row so the class feels why we cross every fifth mark. Read Walk 12 aloud as two gates plus two.
3. **Try It Together.** Lock three to five named playground games before any mark goes up — too many categories never read cleanly. Pupils add one tally each; insist the diagonal lands on the fifth mark, not the sixth. Re-voice strong pupil talk to the room: 'so each gate is worth exactly five.' Catch a straight fifth stroke the moment it appears.
4. **Build Your Question and Tally in Your Copy.** Pause the board. Every pupil writes their own question, category rows, gate-marks and frequency column in copy at the same time. Walk the room watching only two things: the fifth-mark crossing on each gate, and that the frequency number matches the marks.

5. **Class Challenge.** Two minutes only — tally from seats at the window on three or four agreed categories (car colours, jumper colours, vehicle types). Call time, bring counts to the board, and read each frequency aloud from the gates together. If the view is poor, drop the window and read the Walk/Cycle/Bus/Car chart instead.
6. **What Did We Notice?** Ask what makes a question answerable with data. Re-voice: 'a data question is one where every answer sorts into a clear box and we count it.' On the fives point, link back to the no-gate non-example — a gate of five is one glance, loose strokes are slow.

COMMON MISCONCEPTIONS

⚠ Pupils draw the fifth mark as another straight stroke instead of a diagonal gate, so the row never groups into readable fives.

Stop at the board the moment it appears. Erase the fifth straight stroke, redraw the diagonal crossing the four, and have the class say GATE out loud with you so the rhythm sticks.

⚠ Pupils offer opinion or prediction questions — 'Will it rain tomorrow?', 'Is blue the best colour?' — as if those can be settled by a tally.

Hold the question against the three Getting Started examples. Ask: 'Can every answer go into a clear category we count today?' If not, it is not a data question for this lesson.

⚠ Pupils count every single stroke one-by-one when reading a frequency, or write a frequency that does not match the gates on that row.

Cover the loose strokes with your hand and point only at the gates: chant five, ten, then add the spares. Have the pupil restate the total as 'two gates plus two' before writing the frequency.

DIFFERENTIATION

EMERGING

- Give a copybook frame already ruled with three category rows and a frequency column blank — pupils only add gate-marks and totals, not invent the structure.
- Stay on halves of the class data: teacher pre-marks the first gate on each row so the pupil only continues the count.

DEVELOPING

- After the copybook tally, blank one frequency cell and ask the pupil to rebuild it from the gates only — no recounting stroke by stroke.
- Add a spare category mid-count (e.g. Scooter) and ask how the frequency table must change before any new mark goes down.

PROFICIENT

- During Class Challenge read-back, ask: 'Which category would need a new gate next, and how do you know without recounting every stroke?'
- On the copybook page, set a tighter question rule: categories must be mutually exclusive — challenge them to fix a fuzzy set like 'ball games' vs 'football' before tallying.

✓ **Cross-curricular:** Tie to SPHE road safety — use the Walk/Cycle/Bus/Car tally as a springboard to name safer routes to school on the same categories.

ANSWER KEY

Scaffold: visual check on the page

Q1: 17

Q2: 12

Q3: 8

Q4: 23

a) Always : This is the standard method so groups of five stand out clearly.

b) Never : Opinion questions lack clear countable categories that settle on one total.

c) Always : Each gate stands for five so we can count quickly in fives.

d) Sometimes : True for 'What is your favourite fruit?'; false for 'Why do you like maths?', which has no fixed choices to count.

EXTENSION SHEET · STRETCH ANSWERS

S1: 48

S2: 41

S3: 5 gate(s) and 1 singles

S4: 6 gate(s) and 0 singles

S5: 2 gate(s) and 2 singles