

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 · display, explore

WHAT THIS LESSON TEACHES

A good survey question is **clear, specific**, and easy to **answer** with the same kind of word or number every time. Avoid vague words ('often', 'sometimes') unless you give them a number.

→ **Vague:** 'Do you eat fruit a lot?' **Clear:** 'How many pieces of fruit do you eat in a typical day? (0, 1, 2, 3 or more)'.

→ **Vague:** 'How do you get to school?' **Clear:** 'How did you travel to school today? (walk / cycle / bus / car / other)'.

LESSON ARC

Open with three candidate questions on the IWB and a pre-drawn tally (three gates plus two) so the gate-mark lands before anything else. Walk four worked examples — small gated count, ungated-versus-gated, twenty-four marks, transfer to a new question — pausing between each. Class drafts a shared question, takes turns tallying at the board counting 'one, two, three, four, GATE' as each gate fills. Pupils build their own tally frame in the copy, then head to the school gate for five minutes of real data collection.

TEACHING MOVES

- Getting Started.** Give five seconds of silent think-time before any hands go up on the tally count — the gate-mark reveal is the headline of the whole lesson. Take three hands-up votes on the interesting-question question, not open call-outs, so the room stays settled.
- Watch and Notice.** On Example 1, count the first gate aloud — 'one, two, three, four, GATE' — and let the class join in on the second. On Example 2, ask 'which is faster to read?' before revealing the gated version; the ungated stack of six is the slow one, and that is the whole reason gates exist.
- Try It Together.** Settle the question and four categories by class vote before anyone touches the board — don't let tallying start over a half-agreed question. Rotate eight to ten pupils through the IWB, one stroke each, and stop to read the frequency column aloud every time a row fills its first gate.
- Build Your Tally Frame in Your Copy.** Walk the room glancing for row width — if a frame is too narrow for the count coming up at the school gate, prompt the pupil to widen it now, not after the outdoor count. No marking; this is set-up for the field work.
- Class Challenge.** Set a phone timer: 5 minutes to walk out and set up, 5 minutes tallying at the gate, 3 minutes back inside entering totals. Each group elects a spokesperson; before the chart confirms, ask the class to predict which category will dominate.
- What Did We Notice?.** Contrast a data-answerable question with an opinion one: 'is football the best sport?' cannot be settled by counting, but 'which sport do most pupils in our class play?' can. Revoice the gate-mark idea: 'our eyes group fives in one glance, the same way we recognise a hand.'

COMMON MISCONCEPTIONS

⚠ A pupil adds a sixth upright stroke onto a full gate of five, so a single group reads as six instead of starting a new gate.

Stop the class briefly and point at the full gate on the IWB: 'the gate is full — start the next group of five beside it.' Have the pupil redraw the sixth stroke as the start of a new group, then read the row back as 'five and one is six.'

⚠ Pupils propose questions like 'is GAA the best sport?' or 'is school dinner nice?' and expect the tally to settle them.

Hold the question up against the test: 'can we count something to answer this, or are we just collecting opinions?' Reword together — 'is football the best?' becomes 'which sport do most pupils in our class play?' Keep one rejected opinion question on the board as a contrast for the maths-talk wrap.

⚠ When reading a finished tally, pupils count every single stroke one-by-one instead of counting gates in fives then adding the extras.

Cover all but the first gate with your hand and ask 'how many?' — pupil says five. Uncover the next gate: 'and now?' — ten. The point is the eye reading whole gates, not strokes. Re-read the full row that way, fives then extras.

DIFFERENTIATION

EMERGING

- Pre-draw the tally frame template in their copy before the lesson, with category labels already in place — they only add tallies and the frequency total.
- Partner them with a counter on the outdoor count: one pupil watches the gate, one pupil tallies. Halves the cognitive load on a busy footpath.

DEVELOPING

- After their own tally frame is built, ask them to predict the dominant category and write the prediction beside the question before going outside. The count either confirms or surprises.
- Back inside, hand them a row total (e.g. three gates and three strokes) and ask them to redraw it as four gates minus two — same number, different gate count.

PROFICIENT

- Ask them to draft a question where one category is almost certain to dominate and one where the categories will be close. Predict each, then run the real count and explain the gap between prediction and result.
- Pose: could you read a tally of one hundred at a glance? How many gates would that be, and how would you lay them out on the page so the eye still groups them?

- **Cross-curricular:** Tie to SESE Geography — the cars-by-colour and walkers-versus-cyclists counts feed a local traffic-survey discussion: what does the dominant category say about how our school community travels?

ANSWER KEY

a) Pupil-driven — varies per class.

Q3: 41

Q1: 2 gate(s) and 2 singles

Q4: 48

Q2: 6 gate(s) and 0 singles

EXTENSION SHEET · STRETCH ANSWERS

S1: 5 gate(s) and 1 singles

S2: 2 gate(s) and 2 singles