

Posing a question and collecting data with a tally

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 Tally Chart · display, explore

WHAT THIS LESSON TEACHES

A good question for a class tally has just a few possible answers so they are easy to count with strokes.

→ Do you have a pet - yes or no? has two answers.

→ Four strokes stand for four people who chose apple.

MODEL THIS ON THE BOARD

TALLYING MORNING TRAVEL

- 1 Pose a clear question: How do you get to school - walk, car or bus?
- 2 Listen to each pupil and add one stroke for their answer.
- 3 When 5 pupils say walk the Walk row shows a gate of five.
- 4 Three car answers need 3 single strokes in the Car row.

DISCUSSION STARTER

REFLECT

Did counting the tally gates in fives speed things up for you?

LESSON ARC

Open by boarding a weak data question beside a strong one — endless ‘favourite thing about the journey’ versus ‘How did you travel?’ with four tidy answers. Point through a static favourite-fruit tally, stressing that the fifth stroke crosses to make a gate of five. Class tallies favourite subject live on the board, then pupils rule a four-row yes-question chart in their copybooks and run four brisk whole-class tallies. Close by naming why few-answer questions are easier to count.

TEACHING MOVES

1. **Getting Started.** Board the weak/strong pair first and talk it as the worked example: favourite-thing-about-the-journey (endless) beside How did you travel (walked, car, bus, cycled). Take only two or three hands-up answers on the lesson questions — steer anyone offering favourite animal or colour back to a small fixed set before moving on.
2. **Watch and Notice.** This is a static snapshot — point and count aloud, don’t tap. Walk apple (four singles, then show the gate), banana (five, six, seven), orange (class reads it off). Hammer the make-or-break move: the fifth stroke goes across the first four.
3. **Try It Together.** Go round the room so every pupil names one subject — Maths, English, PE or Art — while rotating pupils add one mark per answer on the board. Pause at every fifth mark and ask ‘does this stroke go across?’ Several pupils should get a turn drawing a gate.
4. **Rule Your Tally Chart in Your Copy.** Walk the room glancing for clear row labels and enough space along each line — no marking. Anyone who squashes the rows can switch to the tally-chart printable so they focus on marks, not ruling.

5. **Class Challenge.** Keep the four yes-questions brisk: one pupil records each round, class confirms the count, move on. Stop to count completed rows in fives so pupils feel why gates beat ones — don't re-teach each question.
6. **What Did We Notice?** Listen for pupils naming the number of possible answers as the decider. Re-voice a strong reply: 'so the fewer the answers, the fewer the rows, and the easier it is to tally.'

COMMON MISCONCEPTIONS

⚠ Pupils draw five separate upright strokes instead of crossing the fifth across the first four — the 'gate' never appears.

Freeze the board at the fifth mark. Ask 'does this stroke go across?' and redraw it as a diagonal gate on the same four strokes so the class sees five at a glance.

⚠ Pupils pose wide questions like 'What's your favourite animal?' and then can't fit the answers into a tidy chart.

Hold their question beside a yes/no or four-option version on the board. Count possible rows out loud until they feel why a small fixed set is the point of today's work.

⚠ Pupils put a mark for every pupil on every row, not only for the chosen answer or the yeses.

Replay one answer slowly: one pupil, one subject, one stroke on that row only. Chorus 'one answer, one mark' before the next pupil speaks.

DIFFERENTIATION

EMERGING

- Offer the tally-chart printable so pupils place marks without ruling rows.
- Start them on yes/no questions only — two rows — while the class runs four.

DEVELOPING

- After a full gate appears, ask them to read the row total in fives without recounting ones.
- Swap one Class Challenge question for a three-option version and ask how many rows they now need.

PROFICIENT

- Once their copyboard chart is filled, ask: invent one new class question with at most four answers and explain why it would tally cleanly — write it under the chart.
- Challenge them to spot which of today's rows would be slowest to count without gates, and say why.

✂ **Cross-curricular:** Link to SPHE — tally 'How many of us walked, cycled, or came by car?' as a real active-travel snapshot for the class.

ANSWER KEY

Scaffold: visual check on the page

Q1: 4

Q2: 7

Q3: Yes

Q4: ||||/

Q5: |||

Q6: ||||

a) Always : Few tidy answers make the data easy to count with strokes.

b) Sometimes : True for 'Do you walk to school, yes or no?'; false for 'What is your favourite fruit?', with four choices.

c) Always : A gate is four upright strokes with a fifth diagonal across.

d) Never : Too many possible animals make the answers hard to count.

EXTENSION SHEET · STRETCH ANSWERS

S1: 9

S2: 10

S3: 3

S4: 39

S5: 2 gate(s) and 2 singles

Investigation: Invent a class survey — open-ended; scan pupils' working for valid solution paths rather than a single answer.