

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 data question asks one clear thing and gives everyone a small set of answers to pick from. We record each vote as one tally mark, and every fifth mark is drawn across the first four like a gate so we can count in fives.

→ 'What is your favourite break-time game?' with the answers chasing, football and skipping lets every pupil choose one of three.

→ Four votes for football look like ||||; the fifth vote closes the gate.

MODEL THIS ON THE BOARD

TALLYING FAVOURITE FRUIT

- The question is "What is your favourite fruit?" with rows for Apple, Banana and Orange.
- Apple shows one gate of 5 and 2 extra marks; Banana shows 4 upright marks; Orange is empty.
- Count each row: Apple 7, Banana 4, Orange 0.

Apple

||||

Banana

||||

Orange

DISCUSSION STARTER

REFLECT What makes a class question good for a tally chart?

LESSON ARC

Open by gathering three pupil questions on the board and judging which have a tidy, countable answer set. On the IWB, demo the tally interactive with 'favourite fruit', dwelling on the fifth mark crossing the gate. Pupils run a live class survey with a rotating recorder, then keep their own tally in the copybook. The Class Challenge adds a banded letter-count survey where categories must be agreed before any counting starts.

TEACHING MOVES

- Getting Started.** Take exactly three hands-up questions and write them up — no open call-outs. Then steer the class to sort them: 'favourite county' has a tidy answer set; 'what did you have for breakfast?' sprawls. Make countability the deciding test, not how interesting the question is.
- Watch and Notice.** Narrate the three fixed tally snapshots — don't ask pupils to tap. The make-or-break line, said aloud: 'one, two, three, four, and the fifth goes straight across.' On the seven-vote snapshot, count 'five, six, seven' off one closed gate plus two loose marks so pupils hear counting-in-fives in action.
- Try It Together.** Agree one real question with three answers first, then rotate four pupils as recorder so several get a turn marking. The class agrees or corrects each mark aloud. Watch for the fifth mark drawn upright — pause and ask 'is that a gate? where does the fifth mark go?' before moving on.

4. **Keep Your Own Tally in Your Copy.** Question at the top, categories down the side, one mark per called vote. Walk the room glancing only for the gate being crossed on the fifth mark. No collecting, no grading — this is practice, not marking.
5. **Class Challenge.** Run survey one as a brisk warm-up — one vote, one mark. For survey two, write the three letter-count bands (1–3, 4–6, 7+) on the board first and have each pupil count their own name before calling a band, so every vote lands in exactly one band. Keep it moving; confirm each mark and on.
6. **What Did We Notice?.** Listen for a pupil saying a good question is one where every answer fits in a row. Revoice it cleanly. For the tally point, draw out that marking each vote the instant it's called means nothing gets forgotten and the count stays fair.

COMMON MISCONCEPTIONS

⚠ Pupils draw the fifth mark upright, making five parallel strokes instead of crossing the gate — they're tallying but not gating.

Pause the live tally and point to the run of five uprights: 'is that a gate?' Redraw it with the fifth stroke diagonally across the first four, and have the pupil re-count the row in fives to feel why the gate makes counting faster.

⚠ Pupils suggest a question with no tidy answer set, like 'what did you have for breakfast?', and assume any question can be tallied.

Try to start a tally for it live — within seconds the rows multiply out of control. Contrast with 'favourite break-time game' and three answers. The test: can every answer fit in one of our rows?

⚠ In the banded letter-count survey, a pupil with a 6-letter name hesitates or puts a mark in two bands. Re-read the band boundaries aloud (1–3, 4–6, 7 or more) and show that 6 sits inside 4–6 only. Stress one vote, one band — point along the bands on the board so the pupil places a single mark.

DIFFERENTIATION

EMERGING

- Give these pupils the pre-listed category rows in the copybook so they only mark votes, not invent the structure.
- Hand them the recorder role for the simplest three-answer survey, where the pace is slow and the class corrects aloud.

DEVELOPING

- Ask: in the finished class tally, which category has the most gates? Read two totals straight off the gates without counting mark by mark.
- Have them check the whole-class tally adds up to the number of pupils present — does every vote have a home?

PROFICIENT

- Challenge them to design a new class question of their own where every answer fits in exactly four rows, and defend why their answer set is tidy and complete.
- Narrate a harder live variant from the front — a survey where one band is empty — and ask them to predict what an empty row tells us before the next survey runs.

✂ **Cross-curricular:** Tie to Geography — survey how the class travels to school each morning (walk, cycle, car, bus) and tally the modes.

ANSWER KEY

Scaffold: visual check on the page

Q1: ||||/|

Q2: ||||/||||

Q3: 13

a) **Always** : Clear answer choices are what makes a question good for collecting data.

b) **Always** : Every fifth mark is drawn across the previous four so we can count in fives.

c) **Sometimes** : Rows with fewer than five votes have no gate yet, so it depends on the count.

d) **Never** : Each pupil votes once, so no row can have more marks than pupils.

EXTENSION SHEET · STRETCH ANSWERS

S1: 6 gate(s) and 0 singles

S2: 4 gate(s) and 3 singles

S3: 2 gate(s) and 2 singles

S4: 3 gate(s) and 1 singles

S5: 5

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