

Tally charts and frequency tables

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

Tally marks count items one by one, crossing every fifth stroke to make a gate of five; frequency is the total count from the row.

→ A row with one gate of five and three single marks has frequency 8.

→ Two full gates and four single marks give frequency 14.

MODEL THIS ON THE BOARD

FINDING THE FREQUENCY FROM A TALLY ROW

- 1 Count every full gate of five first.
- 2 Add on the remaining single marks.
- 3 Write the total number as the frequency.

DISCUSSION STARTER

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

LESSON ARC

Display a completed favourite-school-dinners tally and press pupils on how they counted the gates of five so fast. Model turning each tally row into a frequency, counting full gates first then the leftover singles, including the zero-row catch. Pupils take turns at the board on a real class tally, then build a frequency column in their copy and underline the biggest row. The Class Challenge works frequencies from worded rows and totals them.

TEACHING MOVES

1. **Getting Started.** Display the finished tally as pupils settle and give five seconds of quiet think-time before any hands. Take the count, then pivot to the real question: 'did you count one by one, or jump in fives?' — the gate-of-five strategy is what you want voiced.
2. **Watch and Notice.** Work each example aloud, pointing to the full gate first then the singles — say 'five, six' for the row of 6, and 'five, ten, then two' for the 12. Don't rush past the empty row: ask 'what number goes here if nobody chose it?' — the zero is what catches pupils out.
3. **Try It Together.** Load the class tally and rotate four pupils across the four rows; have the whole class count the gates in fives aloud as a check before each frequency is confirmed. Watch for the slip of forgetting the leftover singles after the last full gate, and recount any tricky row together before moving on.
4. **Build the Frequency Column in Your Copy.** Pupils copy the tally and add a frequency column, underlining the biggest row. Walk the room glancing for the dropped-single error — this is practice, not marking — and catch anyone who stops counting at the last full gate.

5. **Class Challenge.** Keep board work brisk: pupils say how they got each frequency, then the class confirms. Drop a 'did you count every full gate of five?' callout before each answer, and watch the 'two gates and three more' row — ten then three is thirteen — before the class totals $4 + 9 = 13$.
6. **What Did We Notice?.** Listen for pupils naming that a frequency number can be read instantly while tally marks must be recounted each time. Revoice a strong answer: 'so the table puts the work in once, and then we just compare the numbers.'

COMMON MISCONCEPTIONS

⚠ Pupils count the full gates of five correctly but stop there, forgetting the single marks left over after the last gate — calling 'two gates and three more' ten instead of thirteen.

Point to the gates and the leftover singles separately on the board: 'five, ten — and how many are still standing on their own?' Make the count two steps every time — gates first, then add the leftovers — so the singles never get dropped.

⚠ Pupils leave the empty row blank or skip it, not seeing that 'nobody chose it' is a real number.

Stop on the empty row and ask 'what number goes here if nobody chose it?' Write 0 in the frequency column and read it aloud as a frequency just like the others — zero is data, not a gap.

DIFFERENTIATION

EMERGING

- Pre-circle each full gate of five on the IWB tally so pupils only count the gates and add the loose singles, not hunt for the groupings.
- Stay on rows with a single gate or fewer in the copybook step while the class moves to multi-gate rows; support these pupils at the front.

DEVELOPING

- After the copy column, ask pupils to find the difference between the most-common and least-common rows, not just name the winner.
- Hand a worded row with three full gates and four more and ask for the frequency before the Class Challenge reaches it.

PROFICIENT

- While fast finishers wait, narrate a harder worded total at the board — four gates and two more, plus three gates and one more — and have them predict the combined frequency before the class checks it.
- Ask: if you knew only the total frequency was 13, how many different tally rows could give that? Have them sketch two possibilities in their copy.

➤ **Cross-curricular:** Tie to SPHE — run a quick class vote on a real choice like favourite yard game, tally it live, then read off the winner from the frequencies.

ANSWER KEY

a) 8

b) 13

c) 11

Q1: 8

Q2: 4

Q3: 6

Q4: 13

Q5: 11

Q6: 42

Spot: A tally gate is four upright marks with a fifth mark drawn diagonally across them, so the whole gate equals 5, not 4.

EXTENSION SHEET · STRETCH ANSWERS

S1: 5 gate(s) and 1 singles

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