

From question to graph: the whole data journey

CURRICULUM ALIGNMENT

DAT.DAT.2

pose questions of interest, record and use data as evidence to answer those questions and communicate the findings.

INTERACTIVES

Tally Chart · display, explore

Bar Chart Builder · challenge, display, explore

WHAT THIS LESSON TEACHES

A data journey takes you from a question to an answer in four steps: ask, tally, build towers on a graph, then read what the graph shows.

- Ask favourite playground game, tally the votes, build towers, and name the winner from the tallest tower.
- Seven Tag tallies become a Tag tower of 7. Tag tower 7 and Football tower 4 means Tag had 3 more votes.

MODEL THIS ON THE BOARD

FROM TALLIES TO TOWERS

- 1 Start with the question: what is your favourite playground game?
- 2 Tally the votes. Tag has one five-gate and two more, so **7** tallies.
- 3 Each tally mark becomes one block. Build a Tag tower of **7** blocks.
- 4 Football has **4** tallies, so its tower is **4** blocks high.
- 5 Read the graph: Tag is tallest. Tag had **3** more votes than Football.

LESSON ARC

Name the playground-game question once, then drive a brisk class vote on the IWB tally chart — one category at a time, hands up once. Watch two full journeys (games, then travel) so pupils see each tally mark become one block. In Try It Together, pupils build the class towers from the live tally while the room counts aloud. Class Challenge runs build → tallest → gap on the same board. Copybook closes with two lines: the question and the winner the towers showed.

TEACHING MOVES

1. **Getting Started.** Put the question up once — favourite playground game: Tag, Skipping or Football — and move straight on. Don't open a debate about other games; the journey is the lesson.
2. **Our Class Vote.** Drive the tally on the IWB one category at a time. Pupils put hands up once only; a pupil or you taps each mark as the class counts aloud. Leave the finished tally visible. Watch for double votes and five-gates counted as four.
3. **Watch and Notice.** Keep ask → tally → towers → read written where the class can see it. On the playground journey, point from each tally row to its tower and pause for a choral count on Tag: seven marks, seven blocks. On travel, ask which tower is tallest before you say it. Hold the class on one tally mark equals one block.
4. **Try It Together.** Keep the class tally on the board. One pupil builds Tag, the next Skipping, the next Football. Before each drag, ask how tall the tower should be; the watching class agrees or corrects out loud. Catch anyone counting a five-gate as four.

5. **Class Challenge.** Run the jobs in order on one board: build Tag 7, Skipping 5, Football 4, name the tallest, then count the extra blocks between Tag and Football before anyone says how many more. If time remains, reset and stretch with Walk 8, Car 6, Bus 2 — build, name the shortest, count how many more Walk than Bus. Whole-class only; no parallel device work.
6. **Write the question and answer.** Leave the frame on the IWB: Question: What is your favourite playground game? Answer: _____ had the most votes. Stronger writers may add _____ had ___ more than _____. Walk the row for two clear lines — whole-class copybook practice, not marking.
7. **What Did We Notice?.** Ask what steps take us from a question all the way to an answer. Listen for ask, tally, towers, read. Revoice a strong answer that names all four; head off anyone who stops at the tally.

COMMON MISCONCEPTIONS

⚠ Pupils count a five-gate tally as four — they see the four strokes and miss the cross-stroke.

Stop and redraw one five-gate slowly on the IWB: four down, one across. Choral-count '1, 2, 3, 4, 5' as you make each stroke, then rebuild that tower so the height matches five.

⚠ Pupils name the tallest tower but freeze on 'how many more' — they re-count each tower from zero instead of reading the gap.

Point at the two finished towers side by side. Cover the shorter one with your hand up to the taller tower's top and ask the class to count only the uncovered blocks.

⚠ Pupils treat the finished tally as the answer and skip the graph — 'Tag has seven, so Tag wins' without building or reading towers.

Cover the tally and leave only the towers showing. Ask again which had the most. Revoice: the towers let us answer at a glance — that is why we build them.

DIFFERENTIATION

EMERGING

- Stay with the class on one category at a time: build only the Tag tower first, choral-count every block, then move to Skipping.
- Pre-write the two copybook lines as cloze frames so pupils only fill the winner's name.

DEVELOPING

- After the sample graph is read, ask: if one more pupil votes Football, which towers change and does the winner stay the same?
- On the copybook lines, add the gap sentence using the towers still on the board: _____ had ___ more than _____.

PROFICIENT

- After Class Challenge, pose a teacher-narrated stretch on the same board: Walk 8, Car 6, Bus 2 — name the shortest and how many more Walk than Bus, without rebuilding from scratch.
- In the copybook, write a fresh question the class could ask next (e.g. favourite break snack) and list the four journey steps underneath — no graph yet, just the plan.

✓ **Cross-curricular:** Tie to PE — after yard games, ask which station was busiest and sketch a quick block graph of the answers back in class.

ANSWER KEY

c) Tag, 3

Q1: 6

Q2: 8

Q3: 4

Q4: Tag

a) **Always** : The four steps are ask, tally, towers, then read.

b) **Always** : Each block matches one tally so height equals votes.

c) **Never** : Each tally becomes one block so five tallies make a tower of 5.

d) **Never** : Tally is one of the four required steps from question to answer.

EXTENSION SHEET · STRETCH ANSWERS

S1: 22

S2: 19

S3: 23

S4: yellow