Lesson 111 DATA & CHANCE

What shall we find out? Posing a question

INTERACTIVES Tally Chart · display, explore

WHAT THIS LESSON TEACHES

A good data question has a few clear answers, so every person's answer fits one group. A messy question gets too many different answers to count, so we tidy it into a question with a few clear answers and give each answer a heading.

→ Which is your favourite fruit: apple, banana or orange?

→ How do you travel to school? Headings: walk, cycle, car and bus.

MODEL THIS ON THE BOARD

TIDYING A MESSY CLASS QUESTION

1. A messy question: What do you like at school?
2. Everyone gives a different answer, so we cannot count the answers.
3. A tidy question: Which break game do you like best, tag, skipping or football?
4. Now there are only **three** answers, so each answer gets a heading: Tag, Skipping, Football.

LESSON ARC

Open by contrasting a messy question ("what do you like?") with a tidy fruit choice so pupils hear why only a few clear answers can be counted. Narrate the static fruit and travel tally snapshots on the IWB — three headings, then four — without adding marks. The fruit headings are ready on the tally-chart interactive: a pupil taps a row for each hand that goes up and the class checks every hand fits. Copybook: write the class question and its three answers. Class Challenge tidies the messy after-school question together and collects the answers from the whole class by hands up.

TEACHING MOVES

1. **Getting Started.** Pose both questions aloud, then take two or three hands-up only. Push toward 'few clear answers' without finishing the idea — leave the full tidy-up for Watch and Notice.
2. **Watch and Notice.** Point at 'what do you like?' and say we could never count that. Point at the fruit tally: three headings, every answer has one home. Do not move on until the class can say why the tidy question is countable. Narrate the travel snapshot next (four answers) the same way — static display only, no new tallies.
3. **Try It Together.** Name the class question once, clearly: which is your favourite fruit, apple, banana or orange? The three headings are ready on the tally-chart interactive, so the pupil at the board only taps a row for each hand; change the pupil after each fruit. Ask the room: does every hand fit one heading? If a hand has nowhere to go, stop and say what new heading would fix it.
4. **Write Our Question in Your Copy.** Pupils write the class question and the three answers one under the other. Walk the room for the full question plus three tidy lines — whole-class practice, not marking.
5. **Class Challenge.** Ask the messy after-school question and hear two or three answers, then tidy it together; accept any version where each pupil fits exactly one heading. One minute for the question and headings in copies while a pupil writes them on the board. Then call each heading: one hand each, a pupil counts and writes the number beside the heading, and everyone copies it. Numbers here, not tally marks: the gate comes next lesson.

6. **What Did We Notice?** Ask what every tidy question had in common. Listen for 'a few clear answers' and revoice: a good data question is one where every person fits exactly one group. Head off 'any question can be counted'.

COMMON MISCONCEPTIONS

⚠ Pupils offer open questions like 'what do you like?' or 'what's your favourite game?' and expect the class to count every different answer.

Write two or three wildly different call-outs on the board and ask where each would land. 'If every answer needs its own heading, we can't finish the chart.' Reshape to a short fixed list together.

⚠ Pupils list almost every possible PE game or after-school activity as a heading, so the chart has eight or ten columns.

Cap it out loud: three or four headings most of us would actually pick. Cross out the rare ones and check again — does every hand still fit one home?

⚠ Pupils set overlapping headings (e.g. car and lift, or play and outside) so one person's answer could sit under two.

Pick one pupil and ask which single heading their answer belongs under. If they hesitate between two, the headings need tightening until each person has exactly one place.

DIFFERENTIATION

EMERGING

- Stay with the fruit question longer: let them tap the rows for a second round of hands before the class moves on.
- In Class Challenge, let them copy the headings from the board, then write only the number of hands beside each one.

DEVELOPING

- After they write fruit headings in the copy, ask: what happens if someone says pear? How do we fix the headings without starting over?
- On the after-school question, ask them to suggest one heading that would fit a child the others leave out.

PROFICIENT

- On the after-school question, ask them to reject one messy draft on the board and replace it with a version where every classmate fits exactly one heading — say why the first draft failed.
- Fast finishers write a question of their own with a few clear answers, then try it on the two children beside them.

↗ **Cross-curricular:** Link to SPHE travel-to-school talk: walk, cycle, car or bus, before the class tallies how it came to school next lesson.

ANSWER KEY

a) Spring, Summer, Autumn, Winter (any order)

b) Four marks in all, one for each person asked

c) The four counts add up to 4

Q1: Jack's

Q2: walk, cycle, car, bus (or other ways children come to school)

Q3: rabbit and no pet

a) Always : Every answer fits one of a few groups, so each group can be counted.

b) Never : Everyone gives a different answer, so there are no groups to count.

c) Sometimes : Favourite fruit had three answers, and how we travel to school had four.

d) Always : Every answer needs a place to go before the counting starts.