

The block graph: one block for each one

CURRICULUM ALIGNMENT

DAT.DAT.2

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

INTERACTIVES [Bar Chart Builder](#) · challenge, display, explore

WHAT THIS LESSON TEACHES

On a block graph we stack one block for every vote or answer. Every tower starts on the same bottom line so the tallest tower shows the most votes.

→ Four apple votes make a tower of four blocks in the apple column.

→ Five banana votes mean five blocks stacked in the banana tower.

MODEL THIS ON THE BOARD

FRUIT SHOP BLOCK GRAPH

- 1 Draw one baseline so every tower starts on the same line.
- 2 Apple has 4 votes: stack 4 blocks in the apple column.
- 3 Banana has 2 votes: stack 2 blocks in the banana column.
- 4 Orange has 3 votes: stack 3 blocks in the orange column.
- 5 Apple is tallest because 4 is more blocks than 2 or 3.

LESSON ARC

Open with a quick hands-up: four apple votes means how many blocks in the apple tower. On the block-graph interactive, count apple and banana towers from the shared baseline, then show why two floating blocks can look taller than they are. Pupils build Apple 4, Banana 2, Orange 3 together from one starting line. Copybook draws towers of 4 and 2 on the same baseline. Class Challenge runs three brisk builds with a Check after each. Maths-talk lands why fair height needs the same starting line.

TEACHING MOVES

1. **Getting Started.** Take three quick hands-up answers to ‘four apple votes — how many blocks?’ Don’t linger; the towers themselves arrive in Watch and Notice.
2. **Watch and Notice.** Point at the shared baseline before anything else. Count the apple blocks aloud with the class, then banana, and name apple as taller. Ask: ‘what if banana’s two blocks started halfway up the board?’ Let them see two blocks can look tall if they float. Land the rule once against each tower: one block means one vote.
3. **Try It Together.** Read the tally once before anyone touches a bar: Apple 4, Banana 2, Orange 3. First pupil builds Apple to 4; class counts. Second builds Banana to 2; third builds Orange to 3. If a tower starts above the baseline, stop and reset it — fair height is the whole point.
4. **Draw two towers.** Walk the row and glance that both towers sit stacked from one shared baseline. Whole-class copybook practice, not marking — reset any tower that floats.
5. **Class Challenge.** Call one target per turn and keep the board work brisk. First: apple tower of 3. Second: full tally Apple 4, Banana 6, Orange 2 — read it once before anyone drags. Third: ask which tower should win on Apple 3, Banana 7, Orange 4 before anyone builds. Use Check each time so the class hears the tick.

6. **What Did We Notice?** Ask why every tower must start from the same line. Listen for fair height or honest comparing. Re-voice: 'if one tower starts higher up, it looks taller even with fewer blocks.' If a pupil only says because the teacher said so, push: 'what would go wrong if they started on different lines?'

COMMON MISCONCEPTIONS

⚠ Pupils stack a tower that floats above the baseline, so a short tower looks as tall as a longer one. Stop and drag the floating tower back down to the shared line. Ask the class to count both towers again — same blocks, very different look once they share a start.

⚠ Pupils judge the winner by which tower 'looks bigger' without counting the blocks. Cover the labels and have the class count each tower aloud block by block. 'Apple is taller because it has more blocks — not because it looks taller.'

⚠ Pupils drop one block too many or too few, so the tower height no longer matches the tally. Point back at the tally number and count the stacked blocks in unison. One block for one vote — rebuild until the count and the tally agree.

DIFFERENTIATION

EMERGING

- Stay with a single tower first — build only Apple to 4 from the baseline while the class watches — before adding a second column.
- On the copybook draw, pre-draw the baseline and the first block of each tower so pupils only stack the remaining blocks.

DEVELOPING

- After the copybook towers of 4 and 2, ask: add one more block to the shorter tower — which is taller now, and by how many?
- On the third Class Challenge build, have them name the winner and the losing margin before anyone drags a block.

PROFICIENT

- Before the third Class Challenge build, hide the tallies and give only 'Banana wins by 3' — pupils must invent a fair three-tower set that fits, still from the same baseline.

✓ **Cross-curricular:** Tie to a class fruit vote at break — tally the real choices, then rebuild the towers on the block-graph interactive after lunch.

ANSWER KEY

Scaffold: visual check on the page

Q1: 5

Q2: 9

Q3: plum

Q4: 8

a) Always : The skill is one block for each one.

b) Always : Towers must share one baseline so height shows the count fairly.

c) Never : Four votes need four blocks, one for each vote.

d) Never : Every tower must start on the shared bottom line.

EXTENSION SHEET · STRETCH ANSWERS

S1: 28

S2: 5

S3: 6

S4: 30