

Grade 2 • Unit 8 • Assessment Guide

Equal Groups

For the Parent or Teacher — What to look for

Unit 8 is about EQUAL GROUPS — the foundation of multiplication. The diagnostic is whether the student sees equal groups as both "equal in size" AND as repeatable units (one of each in a pair, one for each row).

Problem 1 — Is 13 odd?

- Yes, 13 is odd.
- Strong: draws 6 pairs + 1 leftover (or 13 in two rows with one extra). Shows the structural "can't pair up evenly."
- Weak: just says odd because "3 is odd" (looking at last digit only — correct rule but not deep understanding).

Problem 2 — 16 as two equal addends

- 16 is even. $16 = 8 + 8$.
- Strong: immediate. Reveals whether they understand even = split into 2 equal groups.

Problem 3 — Sara vs Lin on odd/even

- Lin is right (you look at the whole number, specifically the ones digit). Sara's reasoning happens to work for 15 (ends in 5, odd) but the LOGIC is wrong (it's not because 1 is odd).
- ★ Strong: "Lin is right — Sara got the answer right by luck. The rule is the ONES digit, not the tens."
- Weak: "both are right" or "Sara is right because 1 is the first number."

Problem 4 — 3×4 array, two ways

- Total: 12.
- By rows: $4 + 4 + 4 = 12$.
- By columns: $3 + 3 + 3 + 3 = 12$.
- ★ The two equations show the COMMUTATIVE structure — same total, different equal addends. This is the heart of array thinking and the bridge to multiplication.

Problem 5 — Draw array of 5 rows of 3

- Should be a 5×3 array. Total: 15.
- Equation could be $3+3+3+3+3=15$ OR $5+5+5=15$ OR $5 \times 3=15$ (some students may know $\times$ already).
- Watch: a 3×5 array instead — still 15, but misses the "rows of" specification.

Problem 6 — Partition rectangle into 2×4

- 8 squares. Should look like a grid with 2 horizontal lines + 1 vertical line dividers (or 1 horizontal + 3 vertical).
- Strong: even-size squares (or close to it).
- Weak: 8 unequal regions. Reveals they're counting parts but not making them equal.

Problem 7 — Can you share odd cookies?

- Strong: "No, you can't split equally — there will be 1 leftover. You'd have to break the cookie or one person gets more."

- Alternate sophisticated answer: "You CAN share if you cut the leftover in half." Accept either if reasoned.
- Weak: says yes without realizing why even matters.

Problem 8 — 2×5 array + story

- 2 rows, 5 in each row, total 10.
- Story should describe 2 groups of 5 OR 5 groups of 2. "There are 2 rows of cupcakes with 5 cupcakes in each row..."
- Strong: maps the structure to a real situation cleanly.

Problem 9 — 3×4 vs 4×3

- Same: total is 12. Both are arrays. Both can be counted by skip-counting.
- Different: orientation, the equal addends are different ($3+3+3+3$ vs $4+4+4$).
- ★ This is the COMMUTATIVE PROPERTY in disguise. Strong response notes both equal totals AND different structures.

Problem 10 — Skip count by 2

- 2, 4, 6, 8, 10, 12, 14.
- Strong reasoning: "They're all even because I started at 2 (even) and added 2 each time. Adding even to even stays even."
- Weak: just continues the pattern without realizing all are even, OR says "yes" without explaining.

— end —