

Equivalent expressions ($4 + 4 + 4 = 3 \times 4$)

CURRICULUM ALIGNMENT

ALG.EXP.3

represent and express problems with known and unknown values in different ways to include the use of appropriate letter-symbols or words.

NUM.OPS.3

understand and apply flexibly the four operations; and the relationships between operations.

INTERACTIVES Balance Scales · challenge, display

WHAT THIS LESSON TEACHES

Repeated addition of the same number is the same as multiplying that number by how many times it appears. So $4 + 4 + 4$ matches 3×4 because both make the same total.

→ $4 + 4 + 4 = 3 \times 4$

→ $2 + 2 + 2 + 2 = 4 \times 2$

MODEL THIS ON THE BOARD

BALANCING THREE LOTS OF FOUR

- 1 Look at the repeated addition $4 + 4 + 4$.
- 2 Count how many fours there are: there are 3 groups.
- 3 Write the matching multiplication as 3×4 .
- 4 Both sides equal 12 so the expressions are equivalent.

DISCUSSION STARTER

REFLECT Which feels shorter — repeated addition or a times sentence? Why?

ANSWER KEY

Scaffold: visual check on the page

Q1: 3×4

Q2: 5×2

Q3: 4×3

Q4: $6 + 6$

Q5: 2×5

Q6: $3 + 3 + 3$

Spot: There are **four** fives added, not five. So $5 + 5 + 5 + 5 = 4 \times 5$ (both equal 20).