

thought exercise

QUANTITATIVE COMPARISONS

In the Quantitative Comparison Thought Exercise, learners evaluate the expression on the left in comparison to the expression on the right, ultimately deciding whether the expressions are equivalent or less than/greater than. This Thought Exercise occurs in a whole group format, with the community of mathematicians engaging in discourse together, discussing and justifying ideas. The Thought Exercise is written out or projected on the whiteboard.

Typically we have one learner evaluate a particular expression and then explain/justify how it compares to the other; the learner does this while standing in front of the mathematics community. Debate often ensues as the community evaluates the quality of the thinking and wrestles with whether they agree or disagree with the justification.

| | | |
|---|-----------------------|--|
| $6(8)$ | <input type="radio"/> | $4 \times 6 \times 2$ |
| $4(-2) - 8$ | <input type="radio"/> | $11 - 13$ |
| $45\left(\frac{1}{5}\right)$ | <input type="radio"/> | $27\left(\frac{1}{3}\right)$ |
| RANGE OF THE SET: $3, 7, 4, 2, 5$ | <input type="radio"/> | MEDIAN OF THE SET: $3, 7, 4, 2, 5$ |
| $3(7) + 7(6)$ | <input type="radio"/> | $42 - 97$ |

Context of Instructional Design

This Thought Exercise was created for Red Band, a group of 2nd and 3rd graders in their first year of studying with us. The particular prompts highlighted here were strategically designed to push learners to consider counts of various terms and how the expressions compare in value. As Red Band worked through this Thought Exercise, they began to look for efficient ways to compare the expressions without fully evaluating them.

For example, in the second comparison, one learner reasoned that the right expression has a value close to 0 and the left expression has a value which is far lesser. They reasoned that some amount of debt losing more would be a greater amount of debt. Without even evaluating the expressions, they knew the right expression would be greater as its value was closer to zero (no debt).

