OPERATION SENSE

Name: "The Truth" **Type:** Routine

About the Routine: "The Truth" is a routine in which students practice identifying reciprocals and the inverse operations. Partners are presented with a set of statements, and they must decide which statements are true and prove it. After sharing some of their proofs, the teacher then poses a "so then" statement to apply their proven true statement in another problem. Note that you can choose to have more than one statement in the routine be true.

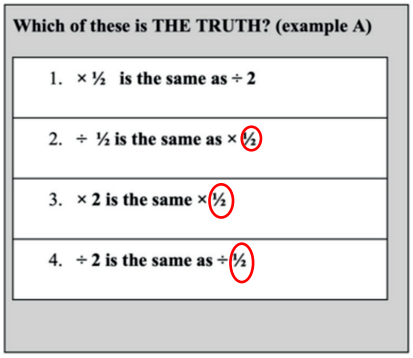
Materials: This routine does not require any materials.

Directions:

1. Pose four statements to students for them to consider, as shown in the examples.
2. Ask students, "Which of these statements are true?"
3. Place students in partners to explore the options and create examples of the ones they believe to be true (in order to prove they are true).
4. After students have had ample time to work, bring the class together to discuss.
5. Poll each pair about which are the truth (or have one of the partners star the ones they decided were true).
6. Solicit examples from the class for the statements they believe to be true and record them on the board.
7. Pose a "so then" statement for students to react to based on the statement they believe to be true.

In Example A, students are presented with four thoughts about the relationship between multiplying and dividing by 2 and by $\frac{1}{2}$. The class agreed that Choice 1 is "the truth." Then, students discussed examples. One group came up with $\frac{1}{2} \times 12 = 6$ and $12 \div 2 = 6$, so $\times \frac{1}{2}$ is the same as $\div 2$. Another group shared that $100 \times \frac{1}{2} = 50$ and $100 \div 2 = 50$, so $\times \frac{1}{2}$ is the same as $\div 2$. After listening to a few more ideas, the teacher then says, "So then, $40 \times \frac{1}{2} = 20$ because $40 \div 2 = 20$."

<use stacked fractions x7>



Example B shows an example of another unit fraction that you might use in this routine. It also shows how you might choose to pose two true statements to be sure that students are thinking about all of the possibilities. In this example, 3 and 4 are both true and related.