# FIGURING OUT
# Fluency
## ADDITION & SUBTRACTION
### With Fractions and Decimals

## A Classroom Companion

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**CORWIN** Mathematics

# Thank you

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Please enjoy this complimentary excerpt from Figuring Out Fluency - Addition and Subtraction With Fractions and Decimals, by Jennifer M. Bay-Williams, John J. SanGiovanni, Sherri Martinie and Jennifer Suh.

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# ACTIVITY 3.10

**Name:** *"Same and Different"*　　　　　**Type:** *Routine*

**About the Routine:** It is important to understand how a strategy works and that the strategy yields the same result as another strategy. In "Same and Different," you pose two expressions and ask students to compare the two (prior to adding). Here is an example:　　　　(Decimal) 0.35 + 0.38　　　0.33 + 0.4

(Fraction)

**Materials**: Prepare a collection of related expressions in one row as shown.

**Directions:**　1. Ask, "How are the expressions the *same*?" Record ideas.

　　　　2. Ask, "How are the expressions *different*?" Record ideas.

　　　　3. Ask students to solve the two problems (e.g., using base-10 pieces, a number line, or mentally, depending on their experiences).

　　　　4. After they have worked out the problems, ask, "How is adding 0.35 + 0.38 *the same as* 0.33 + 0.4? How is adding 0.35 + 0.38 *different from adding* 0.33 + 0.4?" Give students time to talk to a partner or trio about this question.

　　　　5. Share the same and different findings across groups in a whole-group discussion. Students noticings might include the following:
- Both yield the same sum of 0.73.
- The second expression is just adding a tenth with no hundredths.
- They are the same because "you" just made a tenth to show the second expression.

Other example paired expressions for decimals are provided here:

| | | |
|---|---|---|
| 1.9 + 4.8 and 2 + 4.7 | 4.75 + 5.5 and 4.25 + 6 | 9.8 + 1.9 and 10 + 1.7 |
| 1.33 + 2.38 and 1.31 + 2.4 | 0.67 + 0.17 and 0.7 + 0.14 | 0.59 + 0.47 and 0.6 + 0.46 |
| 1.34 + 2.56 and 1.40 + 2.50 | 0.28 + 1.55 and 0.30 + 1.53 | 0.77 + 2.31 and 0.07 + 3.01 |

"Same and Different" is a great activity for fractions as well. You can work with common denominators or use the simplest form and help students work on their automaticity in recognizing equivalencies for common fractions (halves, fourths, and eighths or thirds and sixths). Fraction examples are shared here.

| | | |
|---|---|---|
| $\frac{3}{4}+\frac{3}{4}$ and $1+\frac{1}{2}$ | $4\frac{1}{2}+12\frac{1}{2}$ and $5 + 12$ | $4\frac{5}{6}+3\frac{5}{6}$ and $4\frac{4}{6}+4$ |
| $\frac{4}{5}+\frac{4}{5}$ and $\frac{3}{5}+1$ | $2\frac{1}{2}+1\frac{3}{4}$ and 3 and $1\frac{1}{4}$ | $\frac{8}{12}+1\frac{1}{2}$ and $\frac{1}{6}+2$ |
| $2\frac{3}{4}+\frac{3}{4}$ and $3+\frac{1}{2}$ | $3\frac{1}{2}+\frac{3}{4}$ and 4 and $\frac{1}{4}$ | $\frac{5}{8}+\frac{5}{8}$ and $\frac{1}{4}+1$ |

Following this activity, ask students to "find the pair":

　　(Decimals) 9.8 + 6.8 and _____

　　(Fractions) and _____