

FIGURING OUT  
**Fluency**  
ADDITION & SUBTRACTION  
With Whole Numbers

A Classroom  
Companion

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**CORWIN** Mathematics

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Please enjoy this complimentary excerpt from Figuring Out Fluency - Addition and Subtraction With Whole Numbers, by John J. SanGiovanni, Jennifer M. Bay-Williams and Rosalba Serrano.

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## WORKED EXAMPLES

Worked examples are problems that have been solved. Correctly worked examples can help students make sense of a strategy and incorrectly worked examples attend to common errors.

As you have read throughout this module, Compensation has *options* and this strategy *works differently* for addition and subtraction. Hence, worked examples are important for helping students make sense of Compensation and implement it accurately. Common challenges or errors when using Compensation include the following:

- The student applies an idea that works for addition to a subtraction problem.
  - $58 - 29$ : changes the problem to  $57 - 30$ , “moving one over” [using the idea that  $58 + 29 = 57 + 30$ ]
- The student changes the problem but does not compensate for that change.
  - $78 + 44$ : changes the problem to  $80 + 44$ , adds to get 124, then stops.
  - $479 - 380$ : changes the problem to  $480 - 380$ , subtracts to get 100, then stops.
- The student goes the opposite direction in adjusting the answer.
  - $3,249 - 1,980$ : changes the problem to  $3,249 - 2,000$ , subtracts to get 1,249, and then subtracts 20, instead of adding 20.

The prompts from Activity 4.7 can be used for collecting examples. Throughout the module are various worked examples that you can use as fictional worked examples. A sampling of additional ideas is provided in the following table.

### SAMPLE WORKED EXAMPLES FOR COMPENSATION

	ADDITION	SUBTRACTION
<b>Correctly Worked Example</b> (make sense of the strategy) What did _____ do? Why does it work? Is this a good method for this problem?	Yoli’s work for $392 + 746$ : $400 + 746 = 1,146$ $1,146 - 8 = 1,138$	Samuel’s work for $3,007 - 1,889$ : $\begin{array}{r} 2,999 \\ - 1,881 \\ \hline 1,118 \end{array}$
<b>Partially Worked Example</b> (implement the strategy accurately) Why did _____ start the problem this way? What does _____ need to do to finish the problem?	Cari’s start for $8,895 + 6,735$ : $9,000 + \quad =$	Teshan’s start for $94 - 56$ : $94 - 54 = 40$
<b>Incorrectly Worked Example</b> (highlight common errors) What did _____ do? What mistake does _____ make? How can this mistake be fixed?	Theo’s work for $58 + 45$ : $\begin{array}{r} 60 \\ + 45 \\ \hline 105 \end{array}$	Anitria’s work for $715 - 322$ : $715 - 315 = 400$ $400 + 7 = 407$