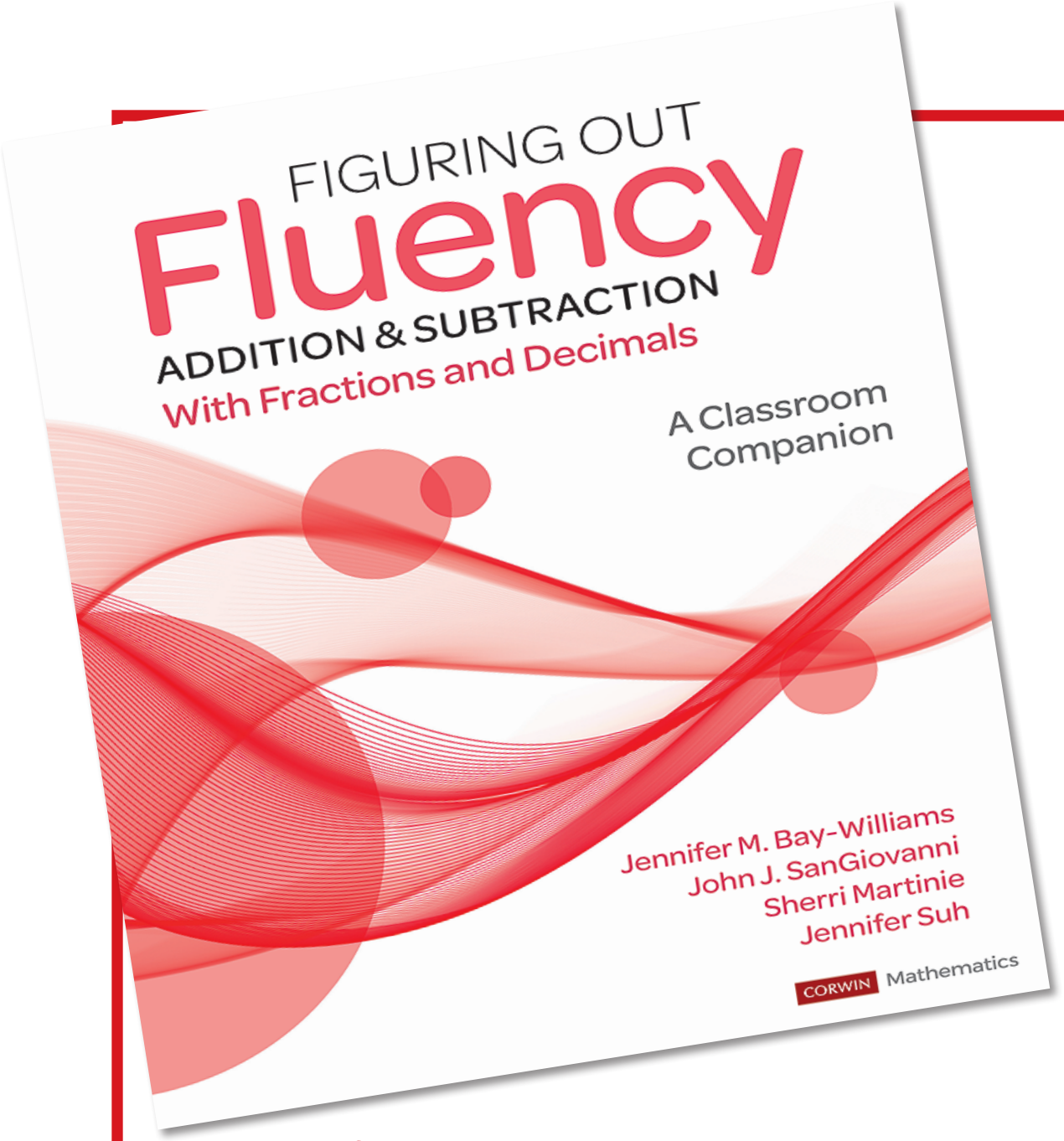


Thank you

FOR YOUR INTEREST IN CORWIN

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.

LEARN MORE about this title!

CORWIN

ACTIVITY 2.6
COUNT ON/COUNT BACK WORKED EXAMPLES

Worked examples can be used as a warmup, a focus of a lesson, at a learning center, or on an assessment. Here we share examples and ideas for preparing worked examples to support student understanding of the Count On/Count Back strategy. There are different ways to pose worked examples, and they each serve a different fluency purpose.

TYPE OF WORKED EXAMPLE	PURPOSE: COMPONENT (FLUENCY ACTIONS)	QUESTIONS FOR DISCUSSIONS OR FOR WRITING RESPONSE
Correctly Worked Example	Efficiency (selects an appropriate strategy) and flexibility (applies a strategy to a new problem type)	What did ____ do? Why does it work? Is this a good method for this problem?
Partially Worked Example	Efficiency (selects an appropriate strategy; solves in a reasonable amount of time) and accuracy (completes steps accurately; gets correct answer)	Why did ____ start the problem this way? What does ____ need to do to finish the problem?
Incorrectly Worked Example	Accuracy (completes steps accurately; gets correct answer)	What did ____ do? What mistake does ____ make? How can this mistake be fixed?

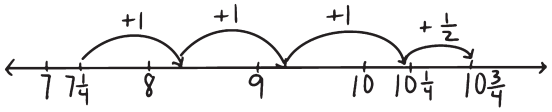
With Count On/Count Back, correctly and partially worked examples help students see different options for chunking (skip-counting) and incorrect examples highlight common errors (as well as successful steps). Another excellent practice is to ask students to compare two correctly worked examples:

- How are they alike? How are they different?
- How do they compare in terms of efficiency?
- When would you use each method?

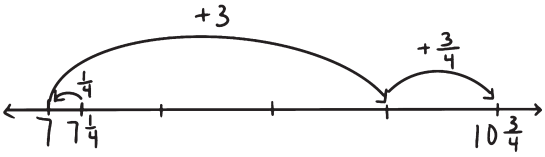
CORRECTLY WORKED EXAMPLES

Compare these two approaches for this problem: $7\frac{1}{4}+3\frac{1}{2}$

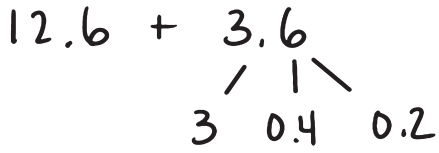
Shayna's counting on



Hakeem's counting on



Peter added 12.6 + 3.6 by counting on.



12.6 + 3 = 15.6
15.6 + 0.4 = 16
16 + 0.2 = 16.2

(*Continued*)

(*Continued*)

PARTIALLY WORKED EXAMPLES

Jada's start for $10\frac{1}{2} - 3\frac{7}{8}$

$10\frac{1}{2} - \frac{1}{2}$

Aliyah's start for $10\frac{1}{2} - 3\frac{7}{8}$

$10\frac{1}{2} - 3$

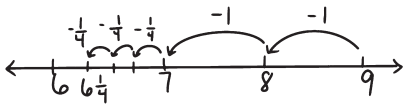
Curtis's Start

$13.6 + 1.85$

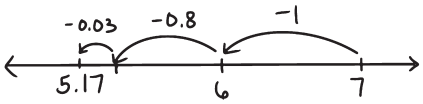
1 | 0.4 | 0.45

INCORRECTLY WORKED EXAMPLES

$9\frac{1}{4} - 2\frac{3}{4}$



$7.05 - 1.83$



The following list of common challenges or errors can be used to create more worked examples.

1. The student loses track of how many jumps and makes too many or too few jumps.
   - 3.94 + 4.77: starts at 4 and counts on to 8.77, but forgets to count back 0.06.
   - $8\frac{7}{10} + 1\frac{9}{10}$: recognizes $1\frac{9}{10}$ is close to 2 and counts on 2 from $8\frac{7}{10}$, but forgets to count back $\frac{1}{10}$.
2. The student makes an error in breaking apart a number.
   - 8.7 + 7.1: from 8.7, counts on 2 to get to 10.7 and then 4 [rather than 5] to get to 14.7 and one more to 14.8.
   - $12\frac{5}{9} - 6\frac{7}{9}$: breaks $\frac{7}{9}$ into $\frac{5}{9}$ and $\frac{3}{9}$.
3. The student uses denominators incorrectly, either by adding/subtracting them or ignoring them when they do not match.
   - $\frac{3}{4} - \frac{1}{2}$: starts with 3 and counts back 1, then starts with 4 and counts back 2, resulting in $\frac{2}{2}$.
4. The student counts on the numerator and picks one of the denominators for the answer.
   - $2\frac{3}{4} - \frac{1}{8}$: ignores that taking away from fourths requires breaking fourths into eights and instead subtracts the numerators only and gets $2\frac{2}{4}$.
5. The student loses track of the place value.
   - 8.7 – 3.05: ignores the zero and counts back three 7.7, 6.6, 5.5, 4.4, then continues jumps for five-tenths 4.3, 4.2, 4.2, 4.0, 3.9.
   - 5.3 + 4: counts on from 0.3 resulting in 5.7.
6. The student misses a count when consecutive digits are the same.
   - 87.1 – 44.9: counts back 4 tens to 47.1, but overlooks 4 ones because a jump of 4 was just made.

Although it is not an error, students may continue to count by unit fractions or by tenths or hundredths instead of chunking their counts more efficiently. You can compare two worked examples, one that counts more efficiently than the other, and have students analyze the two (see also Activity 2.8, "Routine: Or You Could . . .").