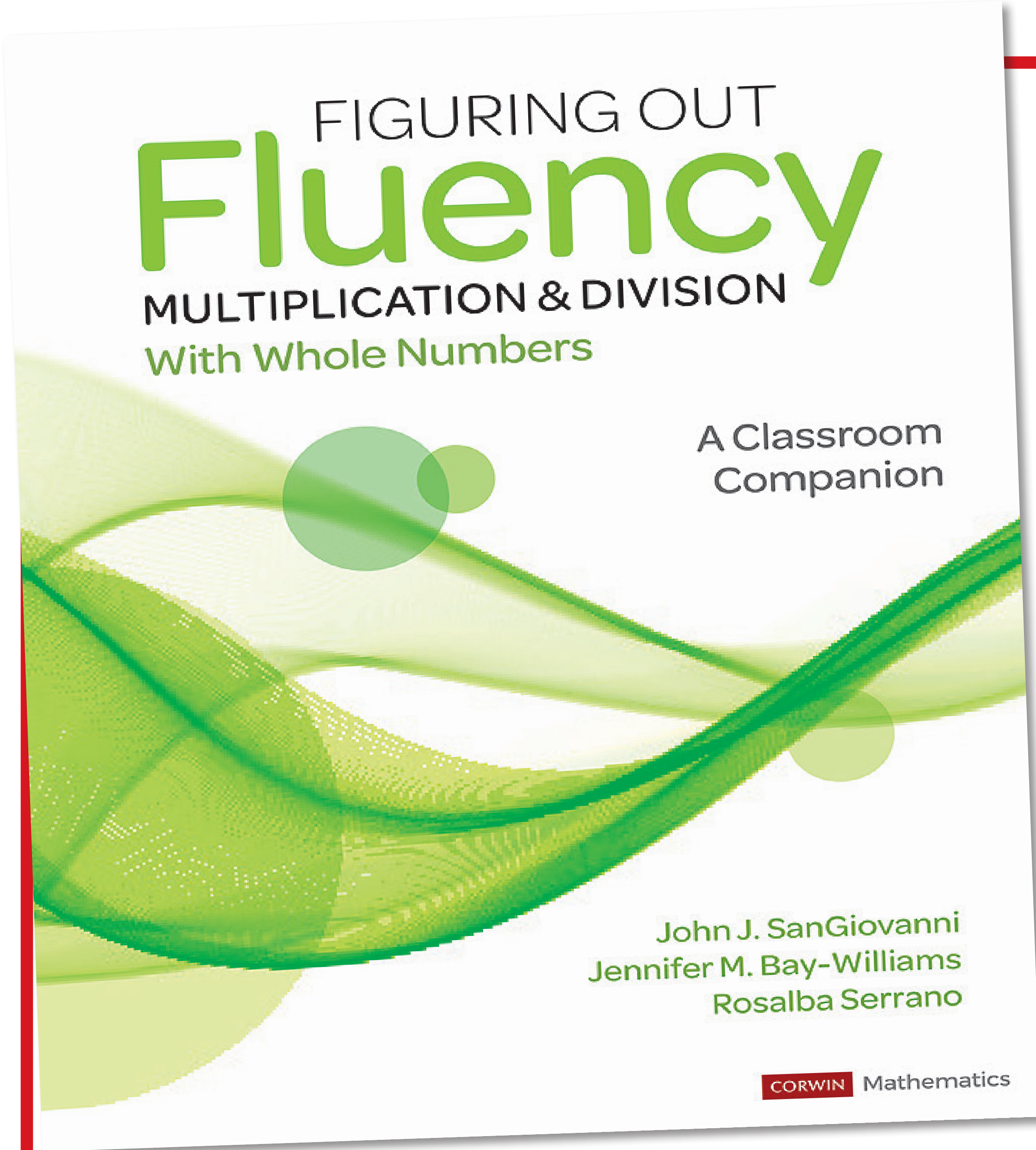

Thank you

FOR YOUR INTEREST IN CORWIN

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

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CORWIN

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.

Partial Quotients, like Think Multiplication, can lead to the following challenges or errors:

1. The student records partial products to start, but the partials go beyond what is needed for the problem at hand.
   - 1,834 ÷ 22: notes 22 × 10 = 220, 22 × 100 = 2,200, and 22 × 1,000 = 22,000.
2. The student continues to use ×10 facts, without looking for other possible partials.
   - 1,834 ÷ 22: 22 × 10 (220) is subtracted repeatedly, rather than noticing and using 22 × 20 (440) or 22 × 30 (660).
3. There is confusion about what "work" is collected to determine the answer.
   - Records a list of partials down the right side of the problem but does not add them together.
4. The student makes subtraction errors, in particular not regrouping when it is necessary.
   - Subtracts 2 – 5 and records 3.

Partial quotients are often obtained by considering multiples of the divisor (×10, ×100, etc.), but there are other options, which can be highlighted through worked examples. Comparing different worked examples can help students gain insights into efficient use of the Partial Quotients strategy. The prompts from Activity 6.5 can be used for collecting worked 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 PARTIAL QUOTIENTS

Correctly Worked Example

(make sense of the strategy)

What did ______ do?

Why does it work?

Is this a good method for this problem?

Thomas's work for 1,876 ÷ 14:

14 × 10 = 140
14 × 100 = 1,400

```
14 | 1,876
    -1,400   14 × 100
       476
     - 140   14 × 10
       336
     - 280   14 × 20
        56
      - 28   14 × 2
        28
      - 28   14 × 2
         0
     (134)
```

Alaina's work for 675 ÷ 7:

7 × 10 = 70
7 × 50 = 350
7 × 90 = 630

```
7 | 675
   -630   7 × 90
     45
    -42   7 × 6
      3
        (96 R3)
```

Partially Worked Example

(implement the strategy accurately)

Why did ______ start the problem this way?

What does ______ need to do to finish the problem?

Autumn's start for 462 ÷ 6:

462 ÷ 6

6 × 10 = 60
6 × 60 = 360

Mika's start for 625 ÷ 75:

625 ÷ 75

75 × 2 = 150
75 × ___ = ___

Incorrectly Worked Example

(highlight common errors)

What did ______ do?

What mistake does ______ make?

How can this mistake be fixed?

Matt's work for 7,008 ÷ 15:

15 × 10 = 150
15 × 100 = 1,500

```
15 | 7,008
    -1,500   15 × 100
     6,508
    -3,000   15 × 200
       508
     - 300   15 × 20
       208
     - 150   15 × 10
       158
     - 150   15 × 10
         8
```