

FIGURING OUT
Fluency
MULTIPLICATION & DIVISION
With Whole Numbers

A Classroom
Companion

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CORWIN Mathematics

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ACTIVITY 1.8

Name: “Complex Number Strings”

Type: Routine

About the Routine: Fluency with multiplying two-, three-, and four-digit factors relies on prowess with multiplying multiples of tens, hundreds, and thousands. Students also must be capable beyond just adding zeros. Instead, they must recognize that 7×60 is 7×6 tens and so on. A complex number string helps students practice relationships between basic facts and relationships between basic facts and multiplying multiples.

Materials: This routine does not require any materials.

- Directions:**
1. Provide a matrix of related number strings with one known product. The first row in this routine is always left blank and found first as an anchor for understanding and conversation as needed.
 2. Students use the known product to work across the rows and down the columns.
 3. After students signal that they know the products of each, you hold a class discussion about how the first known relates to the others. Draw students’ attention to how basic facts relate to multiplying multiples of tens, hundreds, and thousands. Keep in mind that students will recognize the pattern of zeros in the products. Be sure to reinforce why this pattern makes sense.

$1 \times 1 =$	$10 \times 1 =$	$10 \times 10 =$	$100 \times 1 =$	$100 \times 10 =$
$9 \times 5 = 45$	$90 \times 5 =$	$90 \times 50 =$	$900 \times 5 =$	$900 \times 50 =$
$9 \times 6 =$	$90 \times 6 =$	$90 \times 60 =$	$900 \times 6 =$	$900 \times 60 =$
$9 \times 7 =$	$90 \times 7 =$	$90 \times 70 =$	$900 \times 7 =$	$900 \times 70 =$
$9 \times 8 =$	$90 \times 8 =$	$90 \times 80 =$	$900 \times 8 =$	$900 \times 80 =$
$9 \times 16 =$	$90 \times 16 =$	$90 \times 160 =$	$900 \times 16 =$	$900 \times 160 =$