



Topic E

Mental Strategies for Multi-Digit Whole Number Division

5.NBT.1, 5.NBT.2, 5.NBT.6

Focus Standard:	5.NBT.1	Recognize that in a multi-digit number, a digit in one place represents 10 times as much as it represents in the place to its right and $\frac{1}{10}$ of what it represents in the place to its left.
	5.NBT.2	Explain patterns in the number of zeros of the product when multiplying a number by powers of 10, and explain patterns in the placement of the decimal point when a decimal is multiplied or divided by a power of 10. Use whole-number exponents to denote power of 10.
	5.NBT.6	Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.
Instructional Days:	3	
Coherence -Links from:	G4–M3	Multi-Digit Multiplication and Division
	G5–M1	Place Value and Decimal Fractions
-Links to:	G5–M4	Multiplication and Division of Fractions and Decimal Fractions
	G6–M2	Arithmetic Operations Including Division of Fractions

Topics E through H provide a parallel sequence for division to that offered in Topics A to D for multiplication. Topic E begins concretely with place value disks as an introduction to division with multi-digit whole numbers (5.NBT.6). In the same lesson, $420 \div 60$ is interpreted as $420 \div 10 \div 6$. Next, students round dividends and 2-digit divisors to nearby multiples of ten in order to estimate single digit quotients (e.g., $431 \div 58 \approx 420 \div 60 = 7$) and then multi-digit quotients. This work is done horizontally, outside the context of the written vertical method.

A Teaching Sequence Towards Mastery of Mental Strategies for Multi-Digit Whole Number Division

Objective 1: Use *divide by 10* patterns for multi-digit whole number division.
(Lesson 16)

Objective 2: Use basic facts to approximate quotients with two-digit divisors.
(Lessons 17–18)