



Topic E

Multiplying Decimals

5.NBT.2, 5.NBT.3, 5.NBT.7

Focus Standards:	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 powers of 10.
	5.NBT.3	Read, write, and compare decimals to thousandths. <ol style="list-style-type: none"> Read and write decimals to thousandths using base-ten numerals, number names, and expanded form, e.g., $347.392 = 3 \times 100 + 4 \times 10 + 7 \times 1 + 3 \times (1/10) + 9 \times (1/100) + 2 \times (1/1000)$. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.
	5.NBT.7	Add, subtract, multiply, and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.
Instructional Days:	2	
Coherence	-Links from: G4–M3	Multi-Digit Multiplication and Division
	-Links to: G5–M2	Multi-Digit Whole Number and Decimal Fraction Operations
	G6–M2	Arithmetic Operations Including Dividing by a Fraction

A focus on reasoning about the multiplication of a decimal fraction by a one-digit whole number in Topic E provides the link that connects Grade 4 multiplication work and Grade 5 fluency with multi-digit multiplication. Place value understanding of whole-number multiplication coupled with an area model of the distributive property is used to help students build direct parallels between whole-number products and the products of one-digit multipliers and decimals (**5.NBT.7**). Once the decimal has been placed, students use an estimation-based strategy to confirm the reasonableness of the product through place value reasoning. Word problems provide a context within which students can reason about products.

A Teaching Sequence Toward Mastery of Multiplying Decimals

Objective 1: Multiply a decimal fraction by single-digit whole numbers, relate to a written method through application of the area model and place value understanding, and explain the reasoning used.

(Lesson 11)

Objective 2: Multiply a decimal fraction by single-digit whole numbers, including using estimation to confirm the placement of the decimal point.

(Lesson 12)