Topic A

Mental Strategies for Multi-Digit Whole Number Multiplication

5.NBT.1, 5.NBT.2, 5.OA.1

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 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.
Instructional Days:		2	
Coherence	**-Links from:**	G4–M3	Multi-Digit Multiplication and Division
	-Links to:	G5–M5	Addition and Multiplication with Volume and Area
		G6–M5	Area, Surface Area, and Volume Problems

Topic A begins a sequential study of multiplication that culminates in Topic D. In order to link prior learning from Grade 4 and Grade 5's Module 1 and to set the stage for solidifying the standard multiplication algorithm, students begin at the concrete–pictorial level. They use place value disks to model multi-digit multiplication of place value units, e.g., 42 × 10, 42 × 100, 42 × 1,000, leading quickly to problems such as 42 × 30, 42 × 300, and 42 × 3,000 (**5.NBT.1, 5.NBT.2**). Students then round factors in Lesson 2, and discuss the reasonableness of their products. Throughout Topic A, students evaluate and write simple expressions to record their calculations using the associative property and parentheses to record the relevant order of calculations (**5.OA.1**).

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

Objective 1: **Multiply multi-digit whole numbers and multiples of 10 using place value patterns and the distributive and associative properties. (Lesson 1)**

Objective 2: **Estimate multi-digit products by rounding factors to a basic fact and using place value patterns. (Lesson 2)**