Core Content

Cluster Title: Perform operations with multi-digit whole numbers and with decimals to hundredths.

Standard 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.

MASTERY Patterns of Reasoning:

Conceptual:

Students will understand that multi-digit division is related to single-digit division in that it involves grouping (quotative model) or fair share (partitive model).
Students will understand that multiplication and division are inverse operations.

Procedural:

Students can calculate whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors.
Students can explain the calculation.
Students can use a variety of procedures for dividing whole numbers. (For example, lucky 7, standard algorithm, partial quotient, etc.)

Representational:

Students can illustrate division using equations, rectangular arrays, and area models.

Supports for Teachers

Critical Background Knowledge

Conceptual:

Students will understand properties of operations. For example, commutative, associative, identity, etc.
Students will understand both quotative and partitive division.
Students will understand the significance of place value.

Procedural:

Students can regroup with subtraction.
Students can find the whole-number quotient of whole numbers with up to four-digit dividends and one-digit divisors.

Representational:

Students will model simple division with arrays.
Students will model both quotative and partitive division using arrays and area models (4.NBT.6).

Academic Vocabulary and Notation

dividend, divisor, quotient, area model, partitive, quotative, arrays, division notation ($\frac{a}{b}$, a/b, $a \div b$, $b\overline{)a}$)

Instructional Strategies Used	**Resources Used**
When instructing on the use of the traditional algorithm for long division, make sure that place value is expressly provided. For example, in the problem $324 \div 27$ set up as $27\overline{)324}$ do not ask, "How many times does 27 go into 3?" when it is 3 hundred. Instead of asking how many times 27 goes into 32, ask "How many 27's are there in 32 tens?" Use more than one method for dividing, such as partial quotients, lucky 7 and arrays. Work toward linking these strategies to the standard algorithm.	Common Core State Standards document page 89 "Common Multiplication and Division Situations" Understanding Division (Section 2): http://www.conceptualstudy.org/Elementary Math/Understanding Division.htm

Assessment Tasks Used

Skill-Based Task:	**Problem Task:**
Divide the following and show your work. $14\overline{)588}$	Samantha wants to split a collection of stickers into groups of 48. Samantha has 1,008 stickers. How many groups will be created? Show two ways to find the answer.