

Core Content

Cluster Title: Compute fluently with multi-digit numbers and find common factors and multiples.
Standard 2: Fluently divide multi-digit numbers using the standard algorithm.
MASTERY Patterns of Reasoning:
Conceptual: Identify when it is appropriate to use the standard algorithm.
Procedural: Use the standard algorithm to compute multi-digit division problems with procedural fluency. <u>Note:</u> Procedural fluency is defined as skill in carrying out procedures flexibly, accurately, efficiently and appropriately (<i>Adding It Up</i> , National Research Council).
Representational: Divide multi-digit numbers using the standard algorithm.

Supports for Teachers

Critical Background Knowledge
Conceptual: Understand the meaning of division. Understand place value of multi-digit numbers. Know that division is the inverse of multiplication. Illustrate and explain the relationship between calculations and models for multiplying and dividing multi-digit numbers.
Procedural: Divide with single-digit numbers. Use compatible numbers to make an estimation to determine reasonableness of answers. Use the standard algorithm for division. Read division notation.
Representational: Model division with manipulatives, diagrams and story contexts.

Academic Vocabulary and Notation	
dividend, division notation \div , $/$, divisor, quotient, remainder	
Instructional Strategies Used	Resources Used
<p>1. Think Aloud: Do the problem with a partner while explaining and telling what you are thinking and doing.</p> <p>2. Have students identify in a problem set when they would use mental math and when they would use the standard algorithm.</p> <p>3. Connect students' existing strategies for division with the standard algorithm.</p> <p>4. As a starter activity, use division problems that can reasonably be solved by using mental math (e.g., $105/25$), estimation (e.g., $150 \div 12$, $227 \div 30$), and reasoning (e.g., when I think of 105 divided by 25, I think of 4 sets of 25 with 5 left over, the 5 left over is $5/25$ which is $1/5$, so the answer is $4 \frac{1}{5}$). Model for the students your thinking as you work through the problem. (Note: This strategy would not apply to complex division problems for which the algorithm is most appropriate [e.g., $4567 \div 192$]).</p>	<p>http://nlvm.usu.edu/en/nav/frames_asid_197_g_2_t_1.html?open=activities&from=search.html?qt=division</p>
Assessment Tasks Used	
<p>Skill-based Task: 248 divided by 18.</p>	<p>Problem Task: I spent \$504 on 28 tickets for a rock concert. How much did I spend on each ticket?</p>