## Core Content

| **Cluster Title: Perform operations with multi-digit whole numbers and with decimals to hundredths.** |
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| **Standard 5:** Fluently multiply multi-digit whole numbers using the standard algorithm. |
| **MASTERY Patterns of Reasoning:** |
| **Conceptual:**<br>Students will understand that multiplication can be achieved through an algorithm using basic multiplication facts.<br><br>**Procedural:**<br>Students can use the standard algorithm to calculate the product of multi-digit factors.<br><br>**Representational:**<br>Students can represent multi-digit multiplication with arrays, diagrams, area models and manipulatives. |

## Supports for Teachers

| **Critical Background Knowledge** |
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| **Conceptual:**<br>Students will understand that multiplication is repeated addition.<br>Students will understand the significance of place value.<br>Students will be fluent with basic multiplication facts.<br>Students can multiply two-digit numbers using strategies based on place value and the properties of operations.<br><br>**Procedural:**<br>Students can calculate single-digit multiplication.<br>Students can calculate multi-digit addition.<br>Students will know how to regroup when adding.<br><br>**Representational:**<br>Students can model multiplication of single-digit multiplication using set, array, and area models.<br>Students can model regrouping with multi-digit addition. |

| **Academic Vocabulary and Notation** | |
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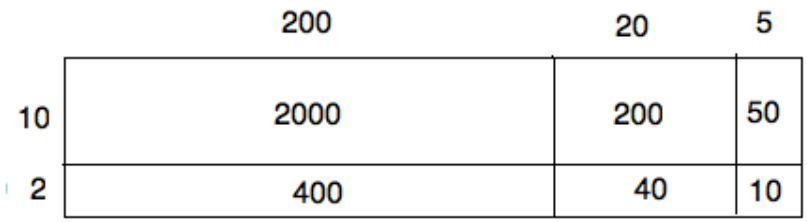
| product, factor, array, area model, equal groups, multiples, algorithm, partial products, multiplication symbols<br>[3 x a, 3 · a, 3 * a, 3(a), 3a] | |
| **Instructional Strategies Used** | **Resources Used** |
| Use an area model for multiplying multi-digit numbers.<br>  <br><br>Area Model<br><br>Use the area model to connect partial products to the standard algorithm.<br><br>Use technology to show lattice multiplication as found on the Everyday Math Online website.<br><br>Model the standard algorithm with blanks or missing digits within the partial products. | Go to Everyday Math Online at http://emccss.everydaymathonline.com/g_login.html and click on the “Free Resources” link. Then click on “Algorithms in Everyday Mathematics” and select “Grade 5,” and finally choose “Multiplication.” |
| **Assessment Tasks Used** | |
| **Skill-Based Task:**<br>Multiply 524 x 639 and show your work | **Problem Task:**<br>A bakery has 245 dozen cupcakes. How many individual cupcakes are there? |