



# MATH NEWS



Grade 4, Module 3, Topic H

January 2014

## 4<sup>th</sup> Grade Math

Module 3: Multi-Digit Multiplication and Division

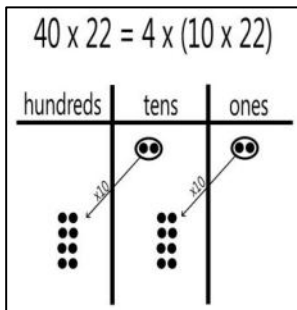
### Math Parent Letter

This document is created to give parents and students a better understanding of the math concepts found in Eureka Math (© 2013 Common Core, Inc.) that is also posted as the Engage New York material which is taught in the classroom. Module 3 of Eureka Math (Engage New York) covers Multi-Digit Multiplication and Division. This newsletter will discuss Module 3, Topic H.

Topic H. Multiplication of Two-Digit by Two-Digit Numbers

Students are introduced to the multiplication algorithm for two-digit by two-digit numbers. The lessons in Topic H provide a firm foundation for understanding the process of the algorithm. Students will make a connection from the area model to the partial product to the standard algorithm.

*Multiply using a place value chart*



Draw disks to show 22.  
 Draw arrows to show 10 times that amount.  
 Draw 4 groups of 22 to represent 4 times that amount.  
 Solve: 8 hundreds 8 tens  
 $4 \times (10 \times 22) = 880$

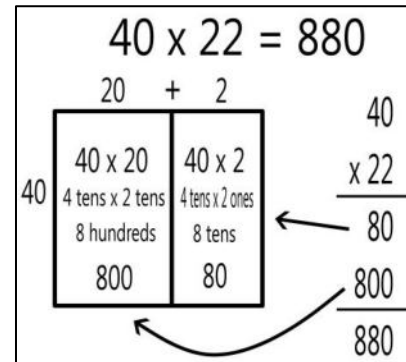
## OBJECTIVE OF TOPIC H

- 1 Multiply two-digit multiples of 10 by two-digit numbers using a place value chart.
- 2 Multiply two-digit multiples of 10 by two-digit numbers using the area model.
- 3 Multiply two-digit by two-digit numbers using four partial products.
- 4 Transition from four partial products to the standard algorithm for two-digit by two-digit multiplication.

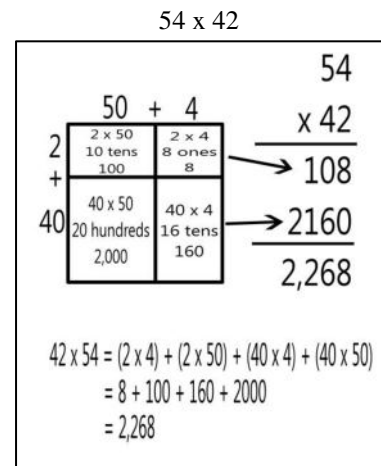
## Focus Area– Topic H

Multiplication of Two-Digit by Two-Digit Numbers

*Multiply using an area model and partial product*



*Multiply using an area model standard algorithm*



Draw a rectangle. Write the numbers in expanded form, or in each place value. This will determine how to subdivide the rectangle.

**40 + 2 vertically and 54 + 4 horizontally**

Label the area model. Write the expressions that represent the area in each of the smaller rectangles and solve each of those equations.

Add the product of the first row together.  
 $(2 \times 4) + (2 \times 50) = 100 + 8 = 108$

Add the products of the second row together.  
 $(40 \times 4) + (40 \times 50) = 160 + 2000 = 2,160$

Next add the sum of both rows together.  
 $108 + 2,160 = 2,268$

$54 \times 42 = 2,268$