



# MATH NEWS



Grade 4, Modules 3, Topic B

October 2013

## 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 the Engage New York material taught in the classroom. Module 3 of the Engage New York material covers Multi-Digit Multiplication and Division. This newsletter will discuss Module 3, Topic B.

#### B. Multiplication by 10, 100, and 1,000

##### Words to know

- Area Model
- Number Disk
- Place Value Chart
- Bundle

##### Helpful Hints!!!

ones x tens = tens

tens x tens = hundreds

hundreds x tens = thousands

$40 \times 10 = 4 \text{ tens} \times 1 \text{ tens}$

$40 \times 100 = 40 \times 10 \times 10 = 4 \text{ tens} \times 1 \text{ ten} \times 1 \text{ ten}$

Decompose – separate numbers into smaller numbers

$$40 \times 20 = \underline{\quad}$$

decompose 40 into  $4 \times 10$ , decompose 20 into  $2 \times 10$

create an equation using the decomposed numbers

$$4 \times 10 \times 2 \times 10 = \underline{\quad}$$

group ones and tens  $(4 \times 2) \times (10 \times 10)$

$$8 \times 100 = 800$$

## OBJECTIVE OF TOPIC B

- 1 Interpret and represent patterns when multiplying by 10, 100, and 1,000 in arrays and numerically.
- 2 Multiply multiples of 10, 100, and 1,000 by single digits, recognizing patterns.
- 3 Multiply two-digit multiples of 10 by two-digit multiples of 1- with an area model.

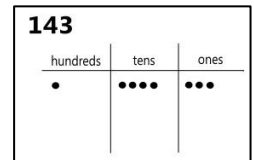
## Focus Area– Topic B

Multiplication by 10, 100, and 1,000

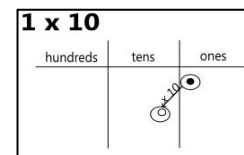
### Place Value Chart & Number Disks

Use number disks to represent 143

First, draw 1 circle in the hundreds place to show 1 hundreds. Next draw 4 circles in the tens place to show 4 tens. Finally, draw 3 circles in the ones place to show 3 ones.

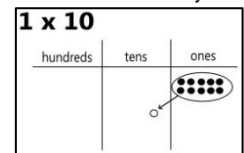


Use a place value chart to multiply



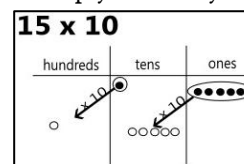
Start by creating number disks to represent 1 one. (the black circle). Place a circle around the group of 1 ones to show that the group will moving as a whole. To show that 1 one is being multiplied by ten, draw an arrow to the tens place, and re-draw the group of 1. Because it was multiplied by 10 it is no longer 1 one, it is now 1 ten. The circles are drawn differently

in order to show which number disks have been moved already. Another way to look at it is having 1 group of 10 ones. 10 ones is equal to 1 ten. On this chart **bundle** the 10 ones to make 1 ten.



$10 \times 1 = 10$ . The same concept applies when multiplying  $15 \times 10$ . Draw 15 on the place value chart. 1 ten and 5 ones Multiply 5 ones by ten to get 5 tens.

(ones x tens = tens) Multiply 1 ten by tens to get 1 hundred. (tens x tens = hundreds)  $15 \times 10 = 1 \text{ hundred } 5 \text{ tens } 0 \text{ ones}$  or  $10 \times 15 = 150$



### Area Model

