MATH NEWS

4th 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
- Place Value Chart
- Number Disk
- Bundle

Helpful Hints!!!

ones x tens = tens
tens x tens = hundreds
hundreds x tens = thousands

40 x 10 = 4 tens x 1 tens
40 x 100 = 40 x 10 x 10 = 4 tens x 1 ten x 1 ten

Decompose – separate numbers into smaller numbers

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

decompose 40 into 4 x 10, decompose 20 into 2 x 10
create an equation using the decomposed numbers

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

group ones and tens (4 x 2) x (10 x 10)

$$8 \times 100 = 800$$

OBJECTIVE OF TOPIC B

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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
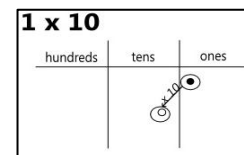
Multiplication by 10, 100, and 1,000

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.
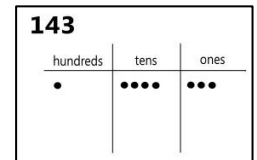

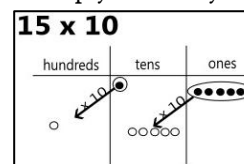
Use a place value chart to multiply

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 x 1 = 10. The same concept applies when multiplying 15 x 10. Draw 15 on the place value chart. 1 ten and 5 ones Multiply 5 ones by ten to get 5 tens.
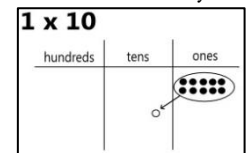
(ones x tens = tens) Multiply 1 ten by tens to get 1 hundred. (tens x tens = hundreds) 15 x 10 = 1 hundred 5 tens 0 ones or 10 x 15 = 150

Area Model