MATH NEWS

Grade 4, Module 1, Topic A

LAFAYETTE PARISH SCHOOL SYSTEM

4th Grade Math

Module 1: Place Value of Multi-Digit Whole Numbers

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 1 of Eureka Math (Engage New York) covers place value, rounding, and algorithms for addition and subtraction.

OBJECTIVES OF TOPIC A

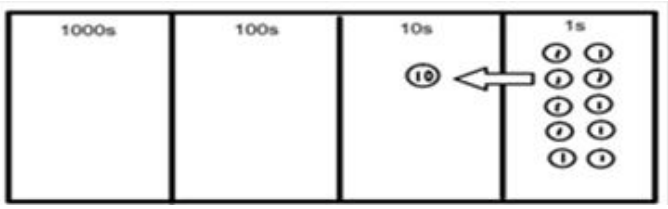
- Interpret a multiplication equation as a comparison
- Recognize a digit represents 10 times the value of what it represents in the place to its right.
- Name numbers within 1 million by building understanding of the place value chart and placement of commas for naming base thousand units
- Read and write multi-digit numbers using base ten numerals, number names, and expanded form

Focus Area ▸ Topic A: *Place Value of Multi-Digit Whole Numbers*

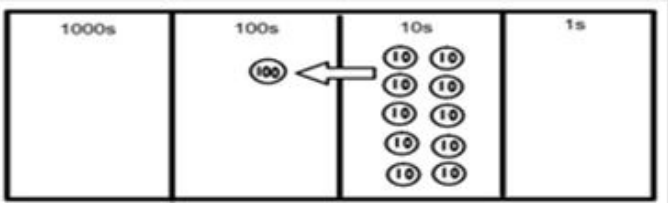
Place Value Charts

Students will use the place value chart to demonstrate every time we get 10 we bundle and make a bigger unit.
→10 ones make 1 ten → 10 times 1 one is 1 ten or 10 ones
We say 1 ten is 10 times as many as 1 one.

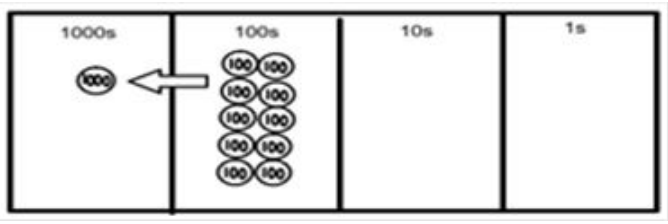
1 ten = 10 x 1 one



1hundred = 10 x 1 ten



1 thousand = 10 x 1 hundred



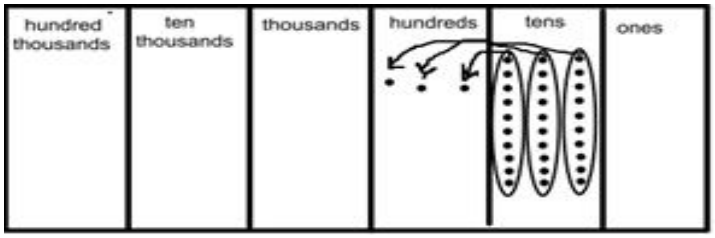
Focus Area ▸ Topic A: *Place Value of Multi-Digit Whole Numbers*

Words to Know:
Digit- a numeral between 0 and 9
Place value -the numerical value that a digit has by virtue of its position in a number
Bundling, renaming, regrouping, trading - exchanging 10 ones for 1 ten, 10 tens for 1 hundred
Unbundling, renaming, regrouping, trading - exchanging 1ten for 10 ones, 1 hundred for 10 tens
Standard form - a number written in the format: 135
Expanded form - addition sentence with the value of each digit written out e.g., 100 + 30 + 5 = 135
Word form – a number written out in words as in 135 →one hundred thirty-five

Multiplication and Division with Place Value Charts

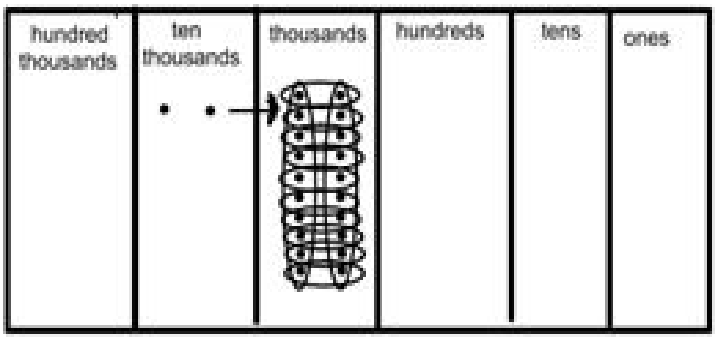
Students will multiply multiple copies of one unit or more units by 10 and divide to reverse the process.

10 times as many as 3 tens is 30 tens or 3 hundreds



10 x 3 tens = 30 tens = 3 hundreds

In the next example we will divide 20,000 by 10. We begin by drawing 2 dots to show our 2 ten thousands that make up our 20,000. Now we can unbundle each and show 20 dots in the thousands place. Since we are dividing by 10, we create 10 groups like this→  . In each group we have 2 dots or 2 thousands. So, 20 thousands divided by 10 is 2 thousand.



20,000 ÷ 10 = 2,000

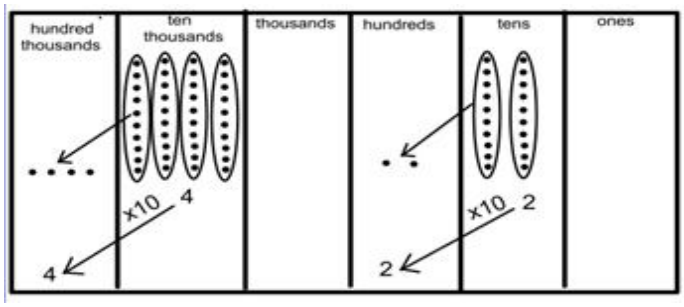
Focus Area ▸ Topic A: *Place Value of Multi-Digit Whole Numbers*

Multiplying and Dividing by 10

In this example we will multiply 40,020 by 10 using the place value chart. First we represent the number with 4 dots in the ten thousands place and 2 dots in the tens place.

When we multiply a number, we make copies. 1 x 10 = 10 so each dot will become 10 dots.

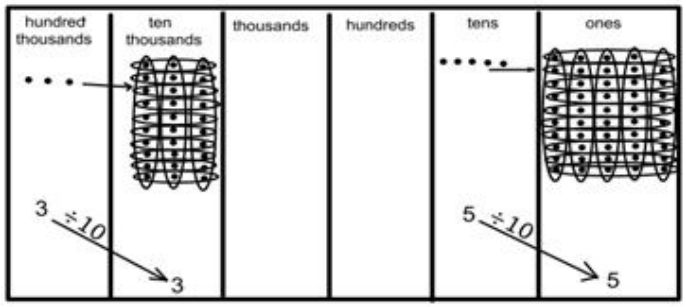
Now, we bundle our groups of ten and represent the bundle with 1 dot in the next place on the chart.



4 ten thousands 2 tens x 10 = 400,200

The reverse same strategy is used when dividing by 10 but it is used in reverse. Consider the next example.

3 hundred thousands 5 tens ÷10=3 ten thousands 5 ones - 30,005



Students will replace the dots with digits and use digits to represent values in a chart.

MILLIONS	THOUSANDS			ONES		
millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
		8	0	2	3	5
		80,000		200	30	5

Module 1: Place Value of Multi-Digit Whole Numbers

Place Value Charts

Students will use their understanding of place value to complete a chart similar to the one below.

Expression	Unit Form	Standard Form
10 x 3 tens	30 tens	300
2 ten thousands ÷10	2 thousands	2,000
(4 ten thousands 2tens) x 10	4 hundred thousand 2 hundreds	400,200
(3 hundred thousands 5 tens) ÷10	3 ten thousands 5 ones	30,005

Students will extend knowledge of the place value chart to establish a repeating pattern of ones, tens, and hundreds. Students will use comas to separate the repeating units.

MILLIONS			THOUSANDS			ONES		
H	T	O	H	T	O	H	T	O
8	0	9	5	6	7	1	2	3

The standard form of the number represented on the chart is written as **809, 567, 123**.

Students will extend the skill by writing the number in word and expanded forms.

MILLIONS			THOUSANDS			ONES		
H	T	O	H	T	O	H	T	O
				8	0	2	3	5

Standard form: 80,235

Word form: eighty thousand, two hundred thirty-five

Expanded form: 80,000 + 200 + 30 + 5

If your child is having trouble reading and writing numbers, have him/her focus on one part of the number at a time. Remind him/her that the commas signal the end of that group of units so it needs a name.

674 , 092

↑

thousand

six hundred seventy-four thousand, ninety-two

600,000 + 70,000 + 4,000 + 90 + 2

5 , 406 , 378

↑ ↑

million thousand

five million, four hundred six thousand, three hundred seventy-eight

5,000,000 + 400,000 + 6,000 + 300 + 70 + 8