P.S. 103
Math Family Letter

Grade 4: Unit 3
Place Value

Student Learning Goals:
- I can identify patterns in place value, such as 10 times more and 10 times less.
- I can write large numbers up to the millions place in expanded, word, standard, and unit form.
- I can compare whole numbers and fractions using visual as well as numerical representations.
- I can round numbers to the nearest place value position.

Key Vocabulary:
- Place value, whole number, greater than, less than, equal to
- ‹, ›, =, comparisons/compare, inequality, expression, equation
- base-ten numerals (standard form), number name (word form), expanded form
- round, vertical number line, estimate
- fraction, numerator, denominator, decompose, unit fraction

### Website for Practice:

Tools/Models/Strategies

Place Value Chart:

Place Value Chart: Millions

Directions: Write your numbers in the chart starting with the ones places and moving to the left to verify the place value of the digits.

Millions Period			Thousands Period			Ones Period		
Hundred Millions	Ten Millions	Millions,	Hundred Thousands	Ten Thousands	Thousands,	Hundreds	Tens	Ones

Place Value Discs:

In 3 thousands + 10 hundreds + 5 tens + 4 ones, we can regroup the 10 hundreds into 1 thousand.
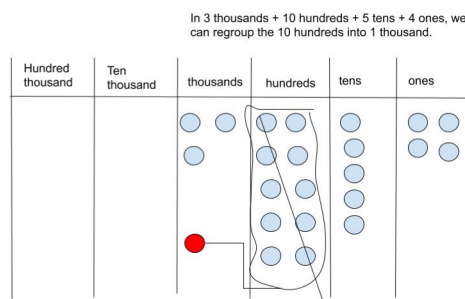
Different Forms of Numbers: (let's take the number 45,038)

Expanded Form: 40,000 + 5,000 + 30 + 8 (there is a zero in the hundreds place)
Standard Form: 45,038
Word Form: Forty-five thousand thirty-eight
Unit Form: 4 ten thousands + 5 thousand + 3 tens + 4 ones

How many tens are there in 45,038? – Believe it or not the answer is 4,503 tens in this number. Ask your children why?

How many hundreds are in 45,038? – 450 hundreds. Ask your children why?

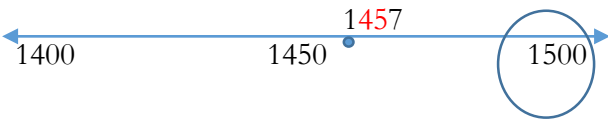### Rounding Numbers: use the range and midpoint between the value being rounded to
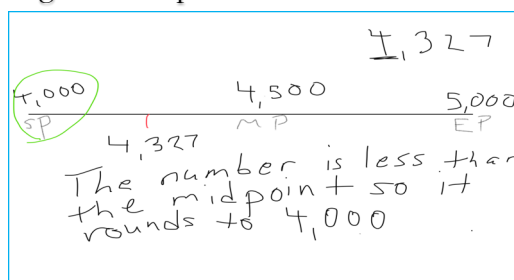
Comparing Numbers: use the number forms and charts above to compare the largest place value first

> greater than   **<** less than   **=** equal to

New York State Test Questions from Previous Exams

4.NBT.1 – Understanding Place Value in Large Numbers Andrew wrote the number 186,425 on the board. In which number is the value of the digit 6 exactly 10 times the value of the digit 6 in the number Andrew wrote? **A** 681,452 **B** 462,017 **C** 246,412 **D** 125,655	Knowing that the value of a digit is 10 times more than the value of the digit to its right is very important for questions like these. They need to understand that even though the digit is the same "6," the value of the 6 in 186,425 is 6,000 and to find 10 times its value is to go from 6,000 to 60,000. Answer choice B is the correct choice, because it has a 6 in the ten thousands position, which is 10 times more than 6,000 in 186,425.
4.NBT.2 – Comparing Large Numbers during any form Which number sentence correctly compares two numbers? **A** forty-six thousand three hundred fifteen $<$ 46,350 **B** $29,073 = 20,000 + 9,000 + 700 + 3$ **C** $10,000 + 6,000 + 400 >$ sixteen thousand four hundred ten **D** $86,502 = 80,000 + 6,000 + 500 + 20$	The key in these types of questions is to go through each choice before choosing an answer. A) $46,315 < 46,350$ B) $26,073 = 29,703$ C) $16,400 > 16,410$ D) $86,502 = 86,520$ If they convert all the numbers to one form, then it is easier to visually compare them. The correct answer is A.
4.NBT.3 – Rounding numbers from any place value Which two numbers both round to 1,500 when rounded to the nearest hundred? **A** 1,399 and 1,599 **B** 1,449 and 1,549 **C** 1,457 and 1,547 **D** 1,489 and 1,589	We expect students to be able to identify the position of the digit being rounded to. Then they should use the range (within ten, hundred or thousand) to see if the number is before or after the mid-point. See the image provided on the first page as an example. Answer choice C is the correct answer. Rounding to the nearest hundred: 1,457 – Range = 1400 to 1500 1457 1400 1450 1500 --- 1,547 – Range = 1500 to 1600 1457 1,500 1550 1600