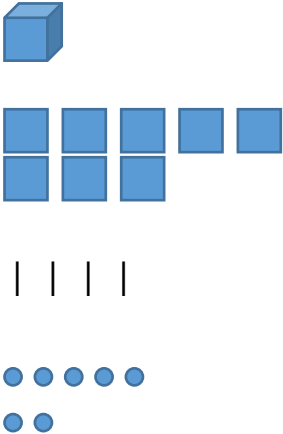# Number Sense Study Guide

We know that math is all about order and structure. Organization is the key! Understanding Place Value is the basics foundation to math, so we make a chart to help us understand. **Place Value** is the <u>location of a digit</u>, the **<u>where</u>** it is.

Thousands Period			Ones Period		
Hundred Thousands Place	Ten Thousands Place	Thousands Place	Hundreds Place	Tens Place	Ones Place

If we know where a digit is in the place value chart it helps us to figure out the **value** of a digit, or **<u>how much</u>** <u>it's worth</u>. This is really important when comparing and rounding because you could have the same digits, but if you mixed them around the value of the number would be different. For example would you rather have 91 dojo points or 19 dojo points? The digits are the same, but where they are located and how much they are worth varies.

Word Forms

There are many ways to read a number.

Standard Form	Orally (spoken)	Written Form	Expanded Form	Pictures
1,847		One thousand, eight hundred forty-seven	1,000 800 40 + ___7	

- You will see **Standard Form** everywhere from grocery stores to street signs.
- You will hear or say the numbers **orally** when talking.
- You will see **Written Form** when reading some word problems, writing checks, important documents, etc.
- You will use **Expanded Form** to help you realize the value of each digit. This will be helpful when you compare number, find the value of numbers, make sure that your answers to problems are reasonable.

You will see **Pictures** to represent number too. We use base ten blocks to help us visualize what each number looks like. When we draw it, we use a dot to represent the units in the ones place, a line to represent the rod in the tens place, and a square to represent the hundreds flat. We will use a cube to represent the thousands place.

Comparing Numbers

When you compare a number first look to see how many digits there are. If one has more whole number digit's then it's easy to see which is greater. We also know that these numbers are not equal. ≠

Example: 4,321 > __431

<u>Four thousand</u>, three hundred twenty one is greater than __ four hundred thirty one.

Start with the greatest place value. If the digit in the same place value is different then it's easy to see which is greater. We also know that these numbers are not equal. ≠

Example: 4,321 < 5,431

<u>Four thousand</u>, three hundred twenty one is less than <u>Five thousand</u>, four hundred thirty one.

If the digit in the same place value is the same, cross it off until you get to a place value where both numbers are different then it's easy to see which is greater. We also know that these numbers are not equal. ≠

Example: 4,321 > 4,311

Four thousand, three hundred <u>twenty</u> one is greater than four thousand, three hundred <u>eleven</u>.

If all of the digits in the same place value are the same, then both numbers are the same or equal.

Example: 4,311 = 4,311

Four thousand, three hundred eleven is equal to four thousand, three hundred eleven.

_____ > _____   _____ < _____   _____ = _____   _____ ≠ _____

__ greater than __   __ less than __   __ equal to __   __ not equal to __

Rounding Numbers

When you round pay attention to where you are rounding to. In third grade it could be the tens place, hundreds, place or thousands place. Thing about the:

multiple of ten (10, 20, 30, 40, 50, 60, 70, 80, 90,100, 110, 120, 130, 140, 150, 160, 170, 180, 190, 200, etc.);

multiples of a hundred (100, 200, 300, 400, 500, 600, 700, 800, 900, 1000, 1100, 1200, 1300, 1400, 1500, 1600, 1700, 1800, 1900, 2000, etc.); and

multiples of a thousand (1000, 2000, 3000, 4000, 5000, 6000, 7000, 8000, 9000, 10000, 11000, 12000, 13000, 14000,15000, 16000, 17000,18000, 19000 20000, 21000, 22000, etc.)

<u>Underline</u> the place you are supposed to round to in the directions, then <u>underline</u> that place value in the number.

Example: Round 4,3<u>2</u>7 to the nearest <u>ten</u>.

Then you should think about which multiple of ten is the number closest to. The number to the right can help you. Circle that number because it's the boss to tell you where to go. It the below example, I know that 27 is closest to thirty

Example: Round 4, 8 <u>2</u>⑦ to the nearest <u>ten</u>.

So the answer would be 4,827 rounded to the nearest ten is 4,830.

The same rules apply if you round to the nearest hundred or thousand.

Example: Round 4, 8<u>②</u>7 to the nearest <u>hundred</u>.

The answer would be 4,827 rounded to the nearest hundred is 4,800.

Example: Round <u>4</u>,⑧2 7 to the nearest <u>thousand</u>.

So the answer would be 4,827 rounded to the nearest thousand is 5,000.