



## Understanding Place Value Number Sense

### Place Value

The value of the place of a digit in a numeral. Digits = 0, 1, 2, 3, 4, 5, 6, 7, 8, 9 Numeral = a symbol or group of symbols used to express a number

Hundreds	Tens	Units	Decimal Point	Tenths	Hundredths	Thousandths
↓	↓	↓	↓	↓	↓	↓
<b>6</b>	<b>5</b>	<b>2</b>	<b>.</b>	<b>3</b>	<b>8</b>	<b>9</b>

**652.389**

Number is said, “six hundred fifty two **AND** three hundred eighty nine thousandths

Note: saying “and” means that this is the point at which you have inserted the decimal

Place value by grade level:

Kindergarten: Count to 20

1<sup>st</sup> Grade: Count to 100

2<sup>nd</sup> Grade: Place value to 1,000

3<sup>rd</sup> Grade: Place value to 10,000

4<sup>th</sup> Grade: Place value to millions AND to the right of the decimal to the hundredths

5<sup>th</sup> Grade: Understand very large numbers (millions and beyond) and very small numbers (ten thousandths)

## Place Value—2<sup>nd</sup> Grade

**Materials:** Cards with the words smallest and largest on them

2 decks of cards with the 10s, Jacks, Queens, Kings, and Jokers removed

1. Shuffle the two decks of cards. Place each deck face down in the center.
2. Each player receives 3 number cards. He/she makes a three digit number.
3. Players read the 3 digit number to each other.
4. One player draws a card from the smallest/largest deck. The player with the larger or smaller number wins all 6 cards. If the numbers are exact, then those cards are put back in the deck of numbers.
5. Repeat until all number cards are gone.

### Variations:

This exercise can be done for other grade levels, increasing the number of digits in the numeral (millions, etc.)

This exercise can be done for 4<sup>th</sup> and 5<sup>th</sup> grade by adding a die to the game and increasing the number of cards drawn to 6. The player rolls the die and begins counting right to left, placing the decimal at that spot, creating (unless the roll is 6) a whole number with a decimal or specific fractional parts.

## Roll 'Em

**Materials:** 2 decks of cards (no 10s, Jacks, Queens, Kings, or Jokers)

3 9-sided dice (number of dice can increase as you want students to work with larger numbers)

1. Students can play alone, with another player, or in small groups
2. Shuffle the decks of cards together and place them face down in the center of the table
3. Student draws three cards and places each card in either the units, tens, or hundreds place as the cards are drawn to make a 3-digit numeral
4. If the student is playing alone, he/she then rolls the dice and creates the largest number that can be made with the 3 dice they have
5. If the cards are organized into the largest number when compared to the dice, then the student earns 1 point, if not, the player receives 0 points.
6. Play continues until a player has earned 10 points

## Stand In Place

Materials: Deck of cards (no 10s, Jacks, Queens, Kings, or Jokers)

1. Have each student select one playing card
2. Have students create groups depending on the number of digits needed to create a numeral (5 students for ten thousands, 8 students for 10 millions, etc.)
3. Have students organize themselves to create a number (i.e. 5 digit number)
4. Have students read the numeral aloud, but each student may only say his/her portion of the number.
5. 23,456 would have 5 students, each holding a number. The first student would say, "twenty", the second student would say, "three thousand", the third student would say "four hundred", the fourth student would say, "fifty", and the final student would say "six".
6. Repeat having students practice reading numbers in this manner to ensure that they clearly understand place value.



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