NUMBER and PLACE VALUE
KNOWLEDGE ORGANISER

Love of Learning

Overview

In our number and place value unit, we learn to:

- Numbers to One Million   - Numbers to Ten Million
- Powers of 10   -10/ 100/ 1,000/ 10,000/ 100,000 More/Less
- Partition Numbers to 10,000,000   - Number Line to 10,000,000
- Compare/Order to 10,000,000   - Round within 10,000,000
- Round any integers   - Negative Numbers

Number and Place Value is useful learning because it is the foundation for all other maths. It helps us to understand the value of digits of numbers and to use mental calculation methods. It helps us to use maths functionally in many areas of our lives.
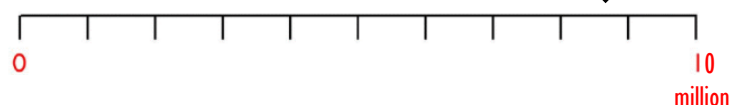
Comparing and Ordering/ Rounding

Comparing and Ordering Numbers

> Greater than
35,213 > 4,840
The number on the left has 3 ten thousands and the number on the right does not have any ten thousands.

= Equals
39 + 42 = 9 x 9
Both calculations have the same value: 81.

< Less than
2,989,523 < 20,153,822
The number on the right has 20 millions and the number on the left has two millions.

35,467	43,567	34,567	54,376	34,576

34,567	34,576	35,467	43,567	54,376

Smallest   Largest

Rounding

Rounding Numbers
A rounded number has about the same value as the starting number, but it is less exact.

Find your place
Look next door
5 or greater, add one more

Round to the nearest ten	Round to the nearest hundred
54 → 50	415 → 400
55 → 60	950 → 1000
313 → 310	7261 → 7300
549 → 550	7221 → 7200
1221 → 1220	36430 → 36400

Round to the nearest million.
1) 2,879,900   3) 6,456,909   5) 345,897,906
   3,000,000   6,000,000   346,000,000
2) 4,500,976   4) 79,957,908   6) 667,905,643
   5,000,000   80,000,000   668,000,000

Numbers to Ten Million/ Negative Numbers

Numbers to Ten Million

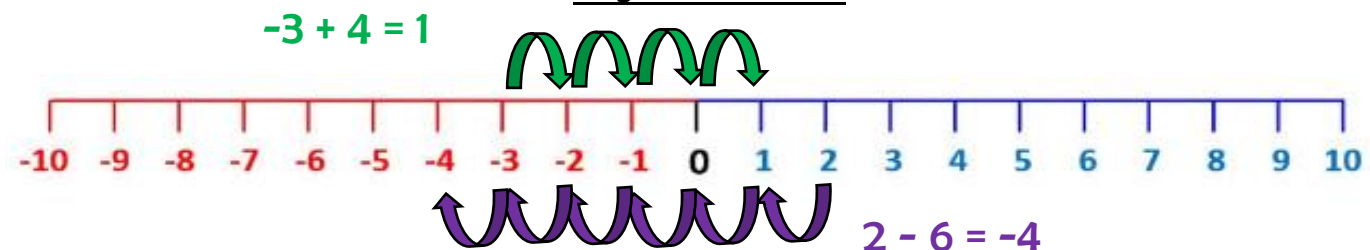|	Place Value	Number	Number of Digits
Ones	Ones	1	1
	Tens	10	2
	Hundreds	100	3
Thousands	Thousands	1,000	4
	Ten Thousands	10,000	5
	Hundred Thousands	100,000	6
Millions	Millions	1,000,000	7
	Ten Millions	10,000,000	8
	Hundred Millions	100,000,000	9

-One hundred thousand is 10 ten thousands.

-One million is 10 hundred thousands.

10,000,000s	1,000,000s	100,000s	10,000s	1000s	100s	10s	1
10 millions	millions	hundred thousands	ten thousands	thousands	hundreds	tens	ones
8	7	5	3	1	4	6	9

eighty seven million, five hundred thirty one thousand, four hundred sixty nine

0   10 million

Negative Numbers

-3 + 4 = 1

-10 -9 -8 -7 -6 -5 -4 -3 -2 -1 0 1 2 3 4 5 6 7 8 9 10

2 - 6 = -4

Gattegno Chart/ Powers of 10

Gattegno Chart

1,000,000	2,000,000	3,000,000	4,000,000	5,000,000	6,000,000	7,000,000	8,000,000	9,000,000
100,000	200,000	300,000	400,000	500,000	600,000	700,000	800,000	900,000
10,000	20,000	30,000	40,000	50,000	60,000	70,000	80,000	90,000
1,000	2,000	3,000	4,000	5,000	6,000	7,000	8,000	9,000
100	200	300	400	500	600	700	800	900
10	20	30	40	50	60	70	80	90
1	2	3	4	5	6	7	8	9

The Gattegno Chart shows that 200,000 is one hundred times bigger than 2,000.

Counting in Powers of 10

475   485   495   505   515

Tens increase until 10 tens becomes 1 hundred and 0 tens.

1739   1839   1939   2039   2139

Hundreds increase until 10 hundreds becomes 1 thousand and 0 hundreds.

376,428   386,428   396,428   406,428   416,428

Ten thousands increase until 10 ten thousands becomes 1 hundred thousands and no ten thousands.

4,784,661   4,884,661   4,984,661   5,084,661   5,184,661

Hundred thousands increase until 10 ten hundred thousands becomes 1 million and no hundred thousands.

Key Vocabulary

Ten Millions   Negative Number   Interval   Sequence   Linear Sequence   Place Value   Partitioning   Numerals   Powers of   Integers