NUMBER and PLACE VALUE

KNOWLEDGE ORGANISER — Year 6

Overview

Number and Place Value we learn:

-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.

Numbers to Ten Million/ Negative Numbers

Numbers to Ten Million

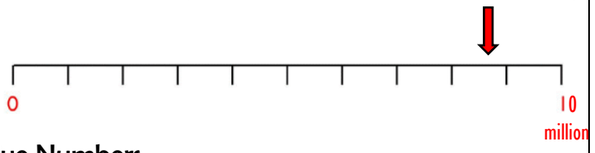
	Place Value	Number	Number of Digits
Ones	Ones	1	1
	Tens	10	2
	Hundreds	100	3
Thousands	Thousands	1,000	4
	Ten Thousands	10,000	5
	Hundred Thousands	100,000	6
Millions	Millions	1,000,000	7
	Ten Millions	10,000,000	8
	Hundred Millions	100,000,000	9

-One hundred thousand is 10 ten thousands.

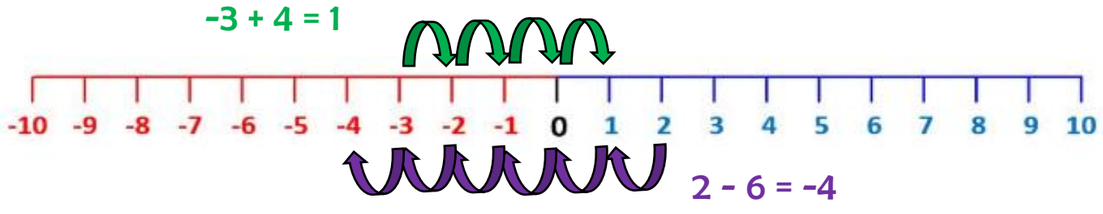
-One million is 10 hundred thousands.

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



Negative Numbers



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 → 3,000,000
2) 4,500,976 → 5,000,000
3) 6,456,909 → 6,000,000
4) 79,957,908 → 80,000,000
5) 345,897,906 → 346,000,000
6) 667,905,643 → 668,000,000

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