



# Year 6 Maths: Number and Place value

- What should I already know?**
- read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit
  - count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000
  - interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0
  - round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000
  - solve number problems and practical problems that involve all of the above
  - read Roman numerals to 1,000 (M) and recognise years written in Roman numerals

**Key Vocabulary and definitions**

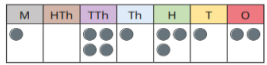
<b>Gattegno chart</b>	A type of place value chart to help understand powers of 10.
<b>Integer</b>	A whole number, not a fraction.
<b>Negative numbers</b>	Less than zero with a minus sign in front of it.
<b>Power of 10</b>	The number 10 multiplied by itself a certain number of times e.g. $10^2 = 10 \times 10 = 100$ .
<b>Round</b>	Replacing a number with an approximate value which is easier to work with.
<b>Ten million</b>	10 000 000 is 10 millions.

## Key Knowledge

**Read, write, order and compare numbers up to 10,000,000 and determine the value of each digit**

1 041 312

Three million, six hundred and seventy one thousand, nine hundred and forty two.



Millions				Thousands			Ones		
M	H	T	O	H	T	O	H	T	O
3	6	7	1	9	4	2			

The value of 6 = 600 000  
The value of 9 = 900

**Number line:**



**Compare:**

62 546 < 6 204 546  
600 000 + 50 000 + 7 000 > 400 000 + 256 000

**Order:** 6,503,102    651,300    6,550,021    690,210

**Round any whole number to a required degree of accuracy**

3 452 761 - rounded to the nearest million = 3 000 000; to the nearest 100 000 = 3 500 000; to the nearest 10 000 = 3 450 000  
To the nearest 1000 = 3 453 000; to the nearest 100 = 3 452 800; to the nearest 10 = 3 452760.

**Use negative numbers in context, and calculate intervals across 0**



**Solve number and practical problems that involve all of the above**

**Powers of 10:**

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 number shown = 78 500  
Ten times bigger = 785 000

How many thousands in 120 000? = 120  
340 000 is 100x the size of 3 400  
2 700 is one hundredth the size of 270 000