Year 6 Maths: Number and Place value

OAK Multi Academy Trust

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 Knowledge

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

1 041 312

M	HTh	TTh	Th	H	T	O

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

Millions	Thousands			Ones		
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:

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

0 ———————————— 10,000,000   = 2 000 000

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
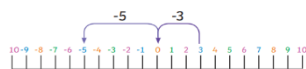
Round any whole number to a required degree of accuracy

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**
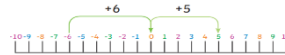
To the nearest 1000 = **3 453 000**; to the nearest 100 = **3 452 800**; to the nearest 10 = **3 452760**.

Use negative numbers in context, and calculate intervals across 0

3 – 8 = -5   -6 + 11 = 5

Solve number and practical problems that involve all of the above

Key Vocabulary and definitions

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

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