Year 6 Place Value — MATHS KNOWLEDGE ORGANISER
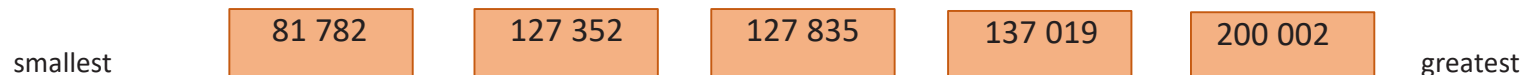
ESSENTIAL VOCABULARY
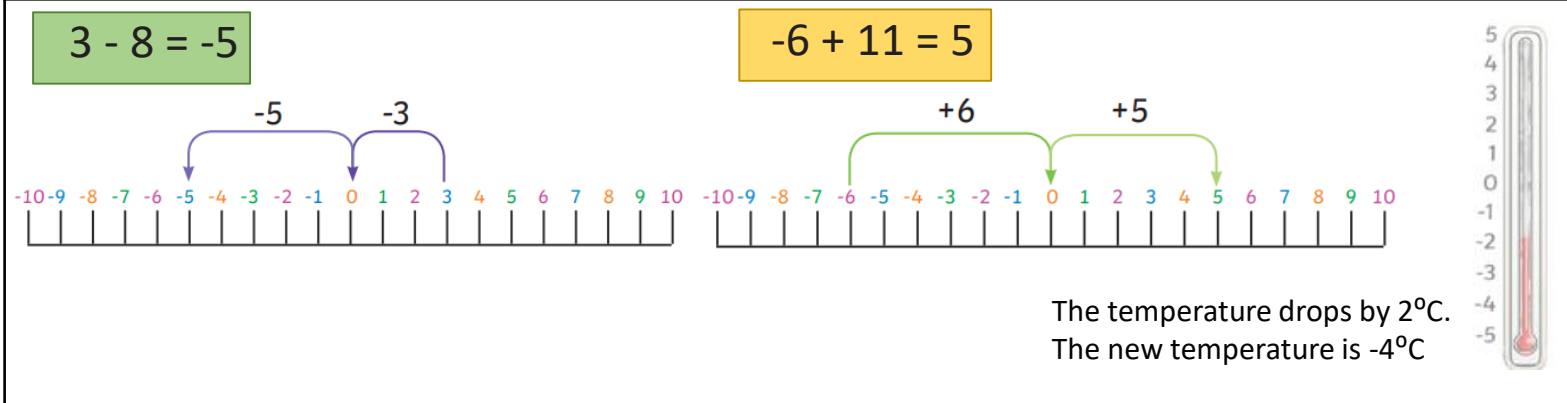
O	Ones
T	Tens
H	Hundreds
Th	Thousands
TThs	Tens of thousands
HThs	Hundreds of thousands
M	Millions
Integer	A whole number
approximate	Almost but not completely accurate
partition	Split into parts
Prime number	a whole number above 1 that cannot be made by multiplying other whole numbers
complement	
composite	when it can be divided exactly by a whole number other than itself.
square number	The result of multiplying an integer (not a fraction) by itself
negative number	any number that is less than zero
sequence	is a list of things (usually numbers) that are in order.
linear sequence	Is a list of numbers that increases or decreases by the same amount each time.

Compare and Order

equals	greater than	less than
$26 + 38 = 8 \times 8$	$223\ 873 > 98\ 256$	$901\ 198 < 1\ 091\ 098$
Both calculations have the value 64.	The number on the left has 2 hundred thousands and the number on the right has 0 hundred thousands.	The number on the right has 1 million and the number on the left has 0 millions.

smallest → 81 782 · 127 352 · 127 835 · 137 019 · 200 002 ← greatest

Negative Numbers

$3 - 8 = -5$

$-6 + 11 = 5$

-5 | -3

+6 | +5

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

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

The temperature drops by 2°C.
The new temperature is -4°C
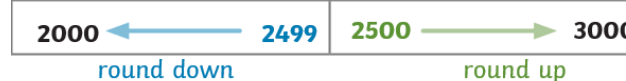
LINKS TO PREVIOUS LEARNING

Know that 10 tenths are equivalent to 1 one, and that 1 is 10 times the size of 0.1. Know that 100 hundredths are equivalent to 1 one, and that 1 is 100 times the size of 0.01. Know that 10 hundredths are equivalent to 1 tenth, and that 0.1 is 10 times the size of 0.01.

Recognise the place value of each digit in numbers with up to 2 decimal places, and compose and decompose numbers with up to 2 decimal places using standard and non-standard partitioning.

Reason about the location of any number with up to 2 decimals places in the linear number system, including identifying the previous and next multiple of 1 and 0.1 and rounding to the nearest of each.

Round Any Number

Rounding to the nearest 1000

2000 ← 2499	2500 → 3000
round down	round up

Rounding to the nearest 10 000

20 000 ← 24 999	25 000 → 30 000
round down	round up

Rounding to the nearest 100 000

200 000 ← 249 999	250 000 → 300 000
round down	round up

Rounding to the nearest 1 000 000

2 000 000 ← 2 499 999	2 500 000 → 3 000 000
round down	round up

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MATHS KNOWLEDGE ORGANISER

Numbers to Ten

3 926 471

three million, nine hundred and twenty-six thousand, four hundred and seventy-one

Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
3	9	2	6	4	7	1

3 926 471	
3 926 000	471

3 926 471
3 500 000   426 300   171

0   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 10 000 000

Powers of 10

The Gattegno chart shows that 400,000 is one hundred times bigger than 4,000. One-thousandth of 4,000 is 4.

0.001	0.002	0.003	0.004	0.005	0.006	0.007	0.008	0.009
0.01	0.02	0.03	0.04	0.05	0.06	0.07	0.08	0.09
0.1	0.2	0.3	0.4	0.5	0.6	0.7	0.8	0.9
1	2	3	4	5	6	7	8	9
10	20	30	40	50	60	70	80	90
100	200	300	400	500	600	700	800	900
1000	2000	3000	4000	5000	6000	7000	8000	9000

Line up the digits so that the place value is accurate. Like this...

Stem Sentences

Speaking Frame - Comparing Numbers

I am looking at the ... place value column because ...

I know that ☐ is greater than ☐ because ...

☐ must be smaller than ☐ because ...

digit, position, less than, more than, whole number

Maths Mastery

Think about the number 34 567 800.

Say this number aloud.
Round this number to the nearest million.

What does the digit '8' represent?
What does the digit '7' represent?

Divide this number by 100 and say your answer aloud.
Divide this number by 1000 and say your answer aloud.

Miss Wong, the teacher, has four cards. On each card is a number:

| 59 996 | 59 943 | 60 026 | 62 312 |

She gives one card to each pupil. The pupils look at their card and say a clue.
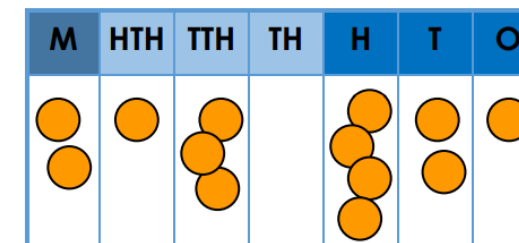Anna says, 'My number is 60 000 to the nearest 10 thousand.'
Bashir says, 'My number has exactly 600 hundreds in it.'
Charis says, 'My number is 59900 to the nearest hundred.'
David says, 'My number is 60 000 to the nearest 10.'

Can you work out which card each pupil had? Explain your choices.

Representing Numbers

M	HTH	TTH	TH	H	T	O

The counters on this place value chart show the number 2,130,421. This is written as two million, one hundred and thirty thousand, four hundred and twenty-one