Arithmetic questions

ANSWERS	
Addition with Formal Written Methods	**Back to Basics**
1.) 687	**5.)** 358
2.) 7,898	**6.)** 9,528
3.) 1,498	**7.)** 3,632
4.) 9,809	**8.)** 1,058

Year 5 | Autumn term | Block 1 – Place value | Step 1

T-Roman numerals to 1,000

L-To know Roman numerals to 1000

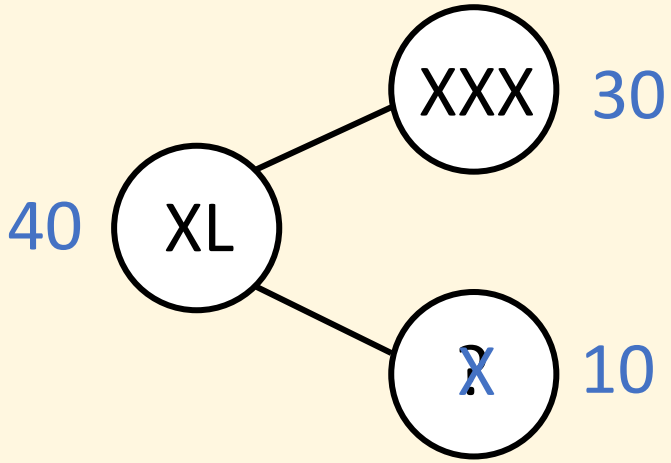
Recall

1) Write the number 6 in Roman numerals. VI

2) Write the number 19 in Roman numerals. XIX

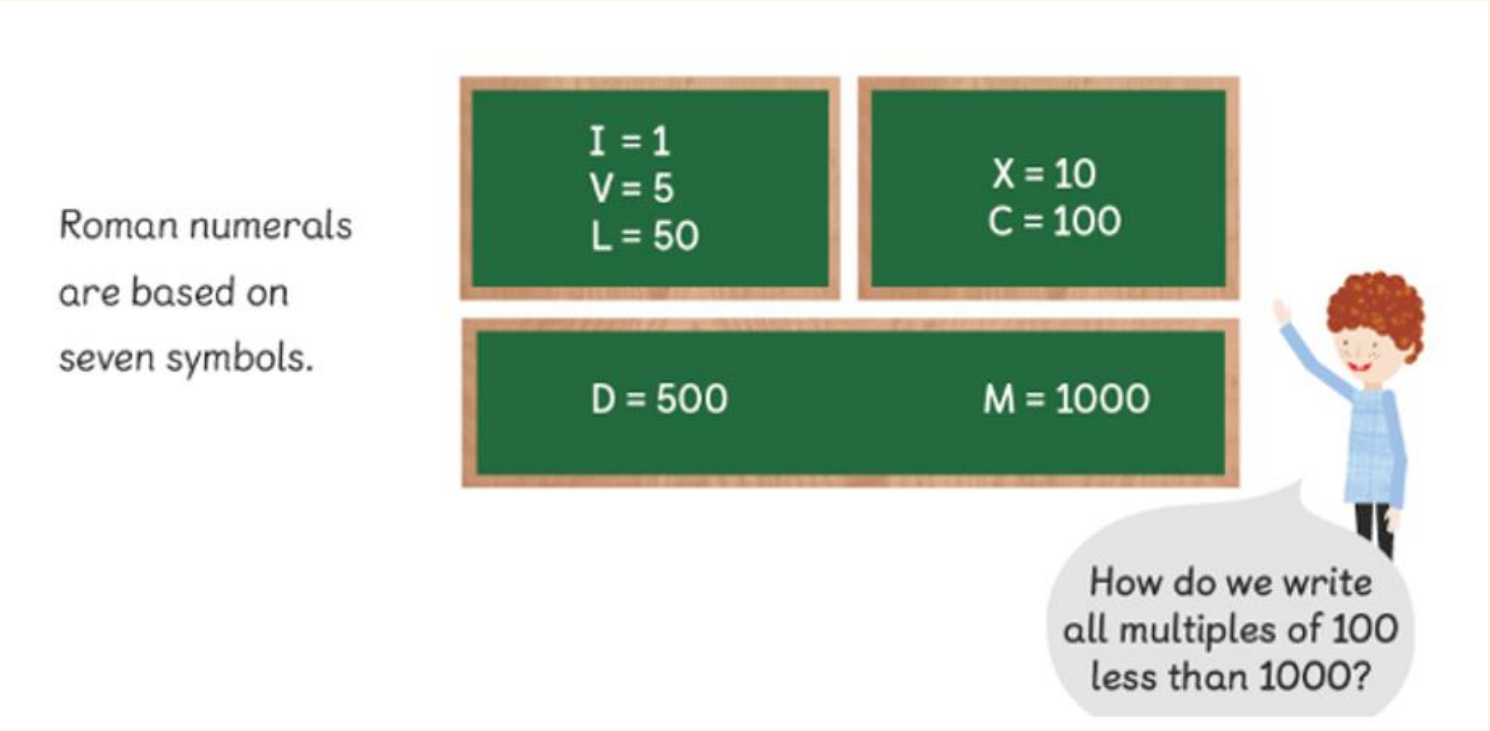
3) Write XCV in words. Ninety-five

4) Complete the part-whole model.



L-To know Roman numerals to 1000

Hook:



Key Questions:
What patterns can you see in the Roman number system?
What rules do we use when converting numbers to Roman numerals?
What letters are used in the Roman number system?
What does each letter represent?
What is the same and what is different about representing the number "five hundred and three" in the Roman number system and in our number system?

L-To know Roman numerals to 1000

Let's Learn:

What letters are used in the Roman number system?

I X L C V

What does each letter represent?

I = 1

V = 5

X = 10

L = 50

C = 100

D

D = 500

M

M = 1,000

L-To know Roman numerals to 1000

Let's Learn:

Here is a date written in Roman numerals.

XXI / IX / MMXV

What day of the month is shown?

XXI means $10 + 10 + 1 = 21$

What month is shown? September

IX means 1 before 10 $10 - 1 = 9$

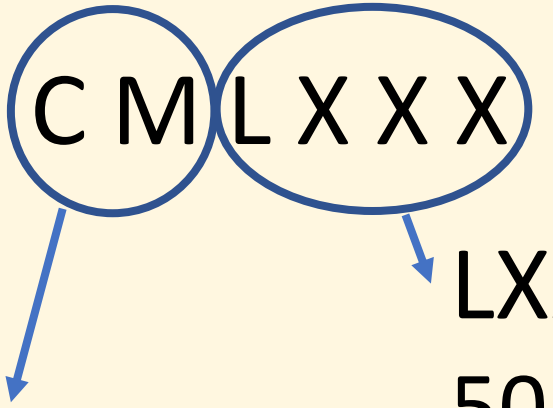
What year is shown?

MMXV means $1{,}000 + 1{,}000 + 10 + 5 = 2{,}015$

21st September 2015

L-To know Roman numerals to 1000

Let's Learn:



means 980

LXXX means

$50 + 10 + 10 + 10 = 80$

CM means

100 before 1,000

$1{,}000 - 100 = 900$

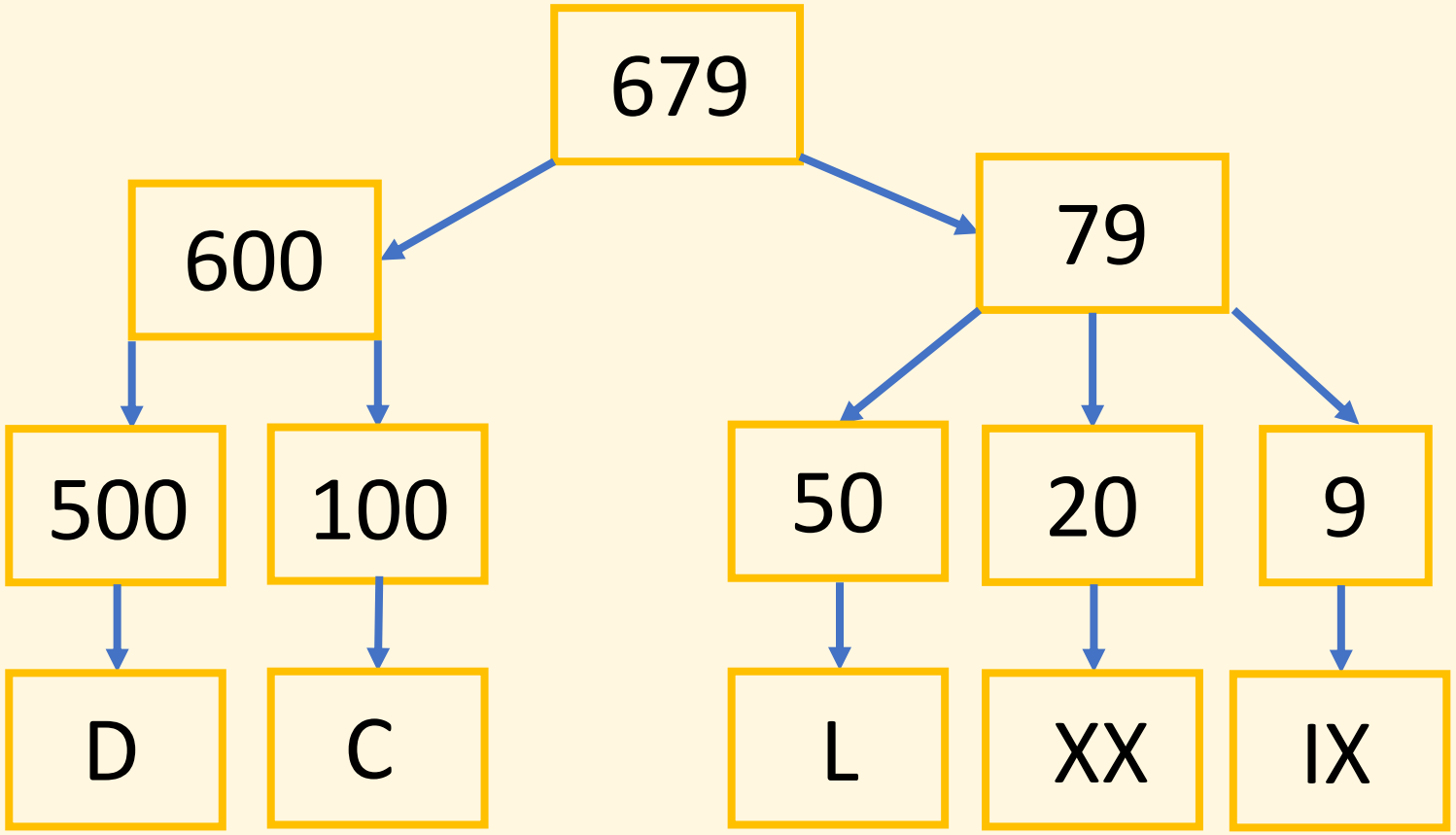
974 in Roman numerals is CMLXXIV

CM LXX IV

L-To know Roman numerals to 1000

Let's Learn:

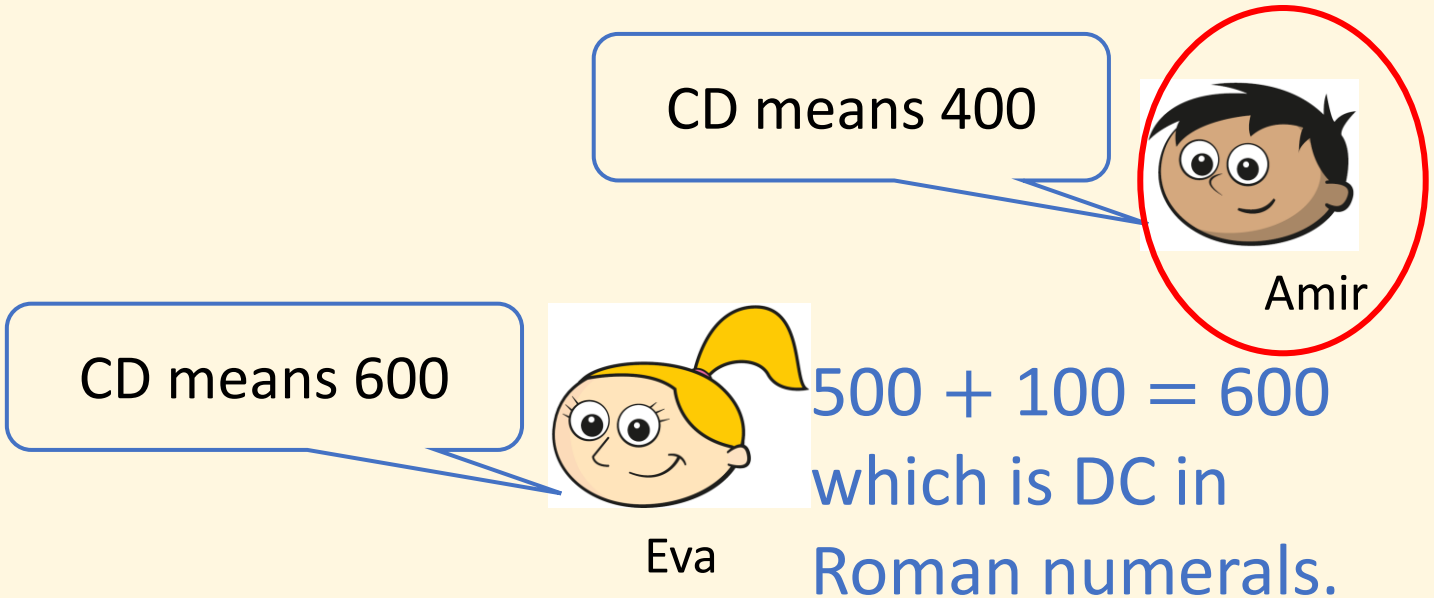
679 in Roman numerals is DC L XX IX



L-To know Roman numerals to 1000

Let's Learn:

What is CD in numerals?



$500 + 100 = 600$ which is DC in Roman numerals.

Who is correct? Amir

What mistake has the other person made?

CD means 100 before 500

$500 - 100 = 400$

L-To know Roman numerals to 1000

Let's Have a Go:

1 Write these numbers in Roman numerals.

(a) 27

(b) 427

2 It is believed that the Pantheon in Rome was constructed in the year 125.

Write the year 125 in Roman numerals.

3

What number is CLXVIII?

Key Questions:
What rules do we use when converting numbers to Roman numerals?
How do you know what order to write the letters when using Roman numerals?

L-To know Roman numerals to 1000

Independent Practice:

1 Complete the tables.

10	20	30	40	50	60	70	80	90	100
X	XX	XXX	XL	L	LX	LXX	LXXX	XC	C

100	200	300	400	500	600	700	800	900	1,000
C	CC	CCC	CD	D	DC	DCC	DCCC	CM	M

2 Complete the table.

Numerals	Words	Roman numerals
52	fifty-two	LII
635	six hundred and thirty-five	DCXXXV
991	nine hundred and ninety-one	CMXCI
407	four hundred and seven	CDVII
839	eight hundred and thirty-nine	DCCCXXXIX

3 Dora and Amir are writing 520 in Roman numerals.

a) Amir

b) Dora has written VC directly from 'five hundred', i.e. V = 5 and C = 100
However, five hundred has its own Roman numeral, D

a) Who is correct?

b) What mistake has the other person made?

a) XV, XXV, XXXV, XL
b) CC, CCCL, CD, CDL
c) XL, L, LXX, LXXX
d) VI, XII, XXI, XIV

4 Complete the sequences.

a) V, X, ☐, XX, ☐, XXX, ☐, ☐

b) C, CL, ☐, CCL, CCC, ☐, ☐, ☐

c) X, XX, XXX, ☐, ☐, LX, ☐, ☐

d) III, ☐, IX, ☐, XV, XVIII, ☐, ☐

L-To know Roman numerals to 1000

If you finish:

Solve

CCCL + CL =

How many calculations, using Roman Numerals, can you write to get the same total?

Possible answers:

CD + C

M ÷ II

C + CC + CC

C × V

Arithmetic questions

ANSWERS	
Addition with Formal Written Methods	**Back to Basics**
1.) 1,086	**5.)** 544
2.) 8,709	**6.)** 21,635
3.) 10,100	**7.)** 7,532
4.) 9,011	**8.)** 1,995

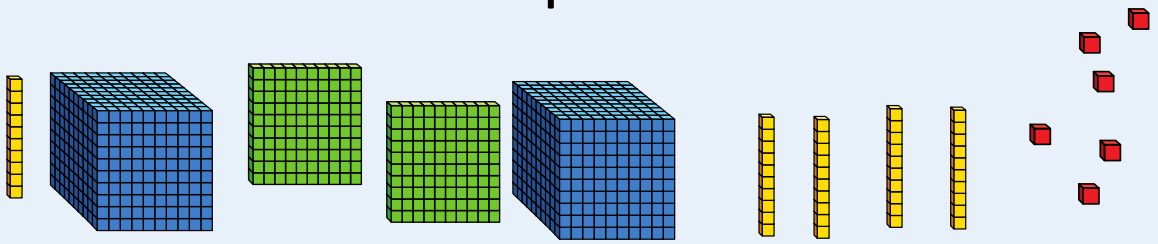
Year 5 | Autumn term | Block 1 – Place value | Step 2

T – Numbers to 10,000

L – To be able to read and represent numbers to 10,000.

Recall

1) What number is represented?



2,256

2) Draw counters to represent 2,362

Thousands	Hundreds	Tens	Ones
● ●	● ● ●	● ● ● ● ● ●	● ●

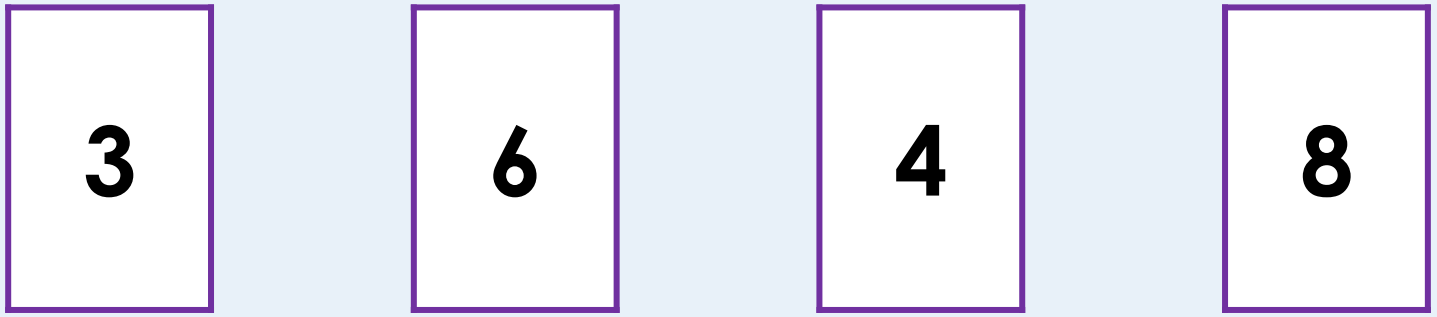
3) What number is represented?

Thousands	Hundreds	Tens	Ones
1,000 1,000 1,000		10 10 10	1 1 1

3,033

L-To be able to read and represent numbers to 10,000.

Hook



Key Questions:

What is the largest number you can make with these digit cards?

What is the smallest number you can make?

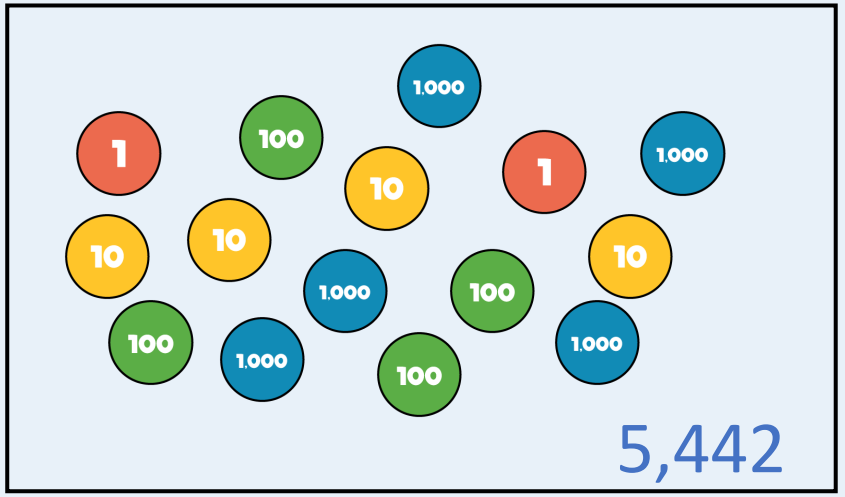
What is the smallest odd number you can make?

What is the largest even number you can make?

L-To be able to read and represent numbers to 10,000.

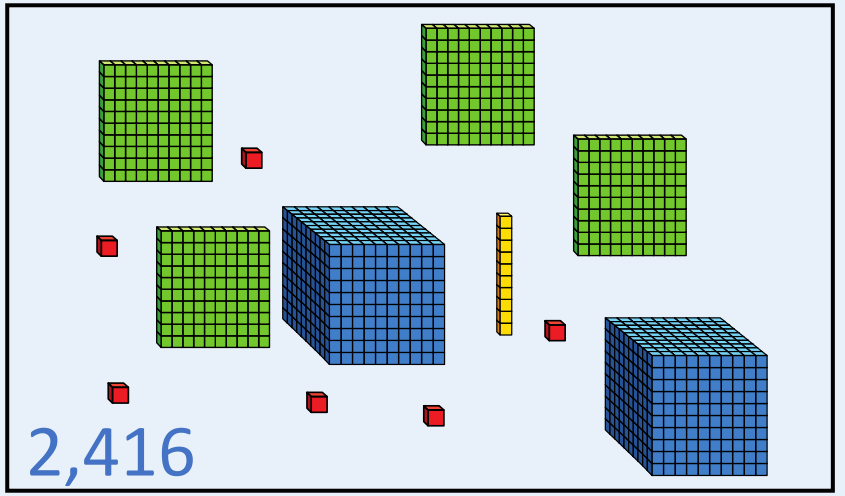
Let's Learn:

What numbers are shown?



5,442

5,000
400
40
2



2,416

2,000
400
10
6

L-To be able to read and represent numbers to 10,000.

Let's Learn:

7653

Key Questions:

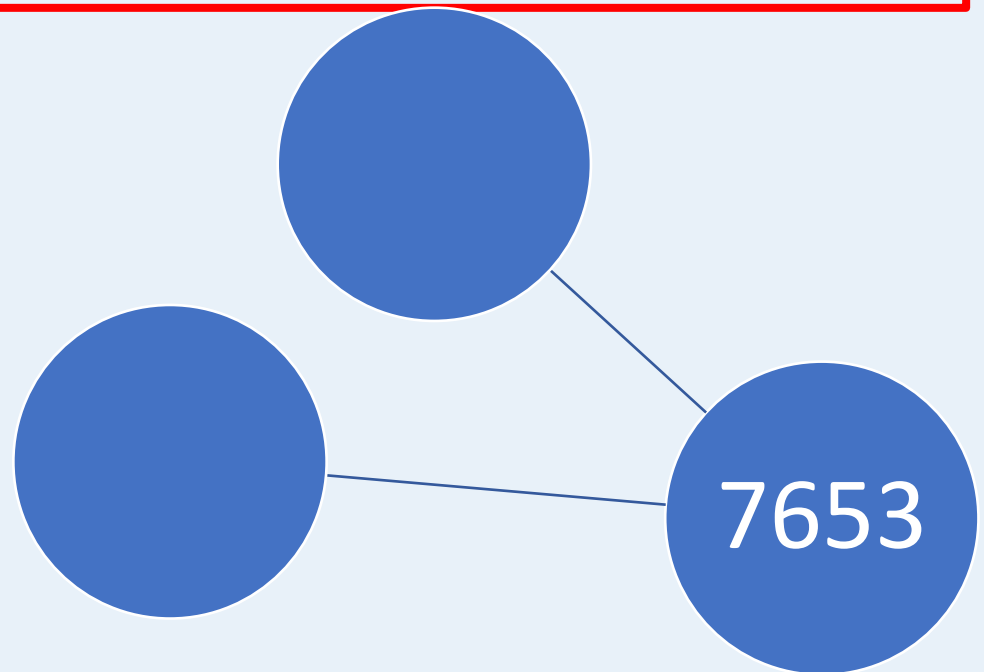
What does each digit represent?

How can we represent this number using concrete resources?

How can you represent this number using pictorial manipulatives?

The value of the _____ in _____ is _____

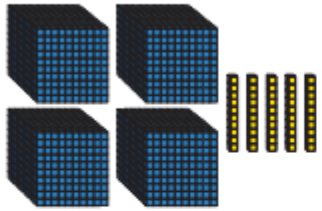
Th	H	T	O

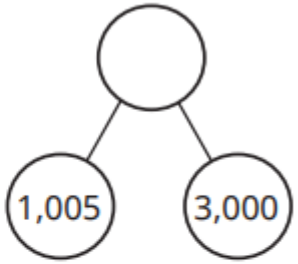


L-To be able to read and represent numbers to 10,000.

Let's Have a go:

1 Match the representations to the numbers.





4,005	4,500	4,050

2 Show the number 2,536 in three different ways.

Key Questions:

How have the numbers been represented?

How can you find the odd one out? Explain your reasoning.

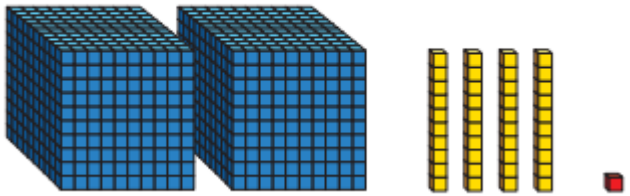
What number could the arrow be pointing to?

L-To be able to read and represent numbers to 10,000.

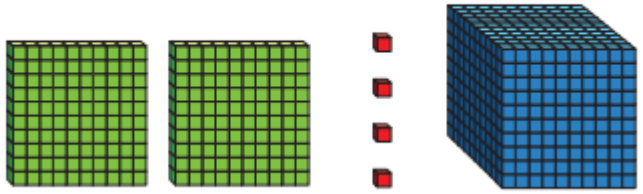
Independent Practice:

1 What numbers are represented?

a)



b)

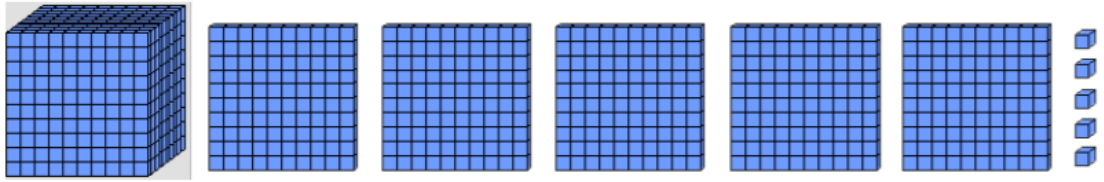


c)

TTh	Th	H	T	O
	1,000 1,000 1,000 1,000		10	1 1

a) 2,041
b) 1,204
c) 4,012

2. Adam says that the number 1,550 is shown below.



Is he correct?

3. Draw counters to show each number.

2,406

Th	H	T	O

5,063

Th	H	T	O

L-To be able to read and represent numbers to 10,000.

Independent Practice:

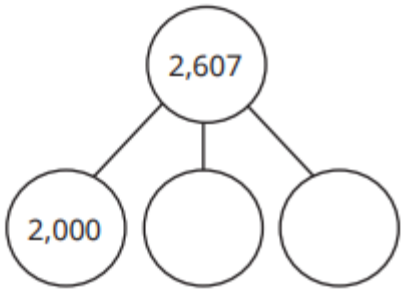
4 Complete the table.

Number	1 more	10 more	100 more	1,000 more
3,000				
7,213				
	4,511			
		1,291		
				2,899
			6,059	

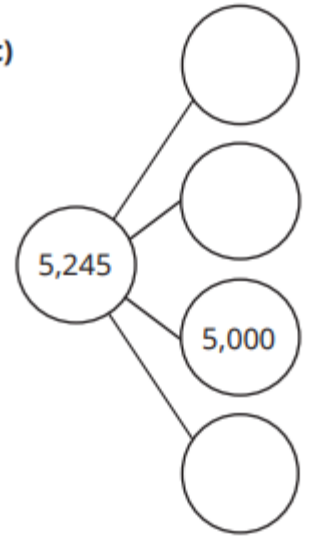
Number	1 more	10 more	100 more	1,000 more
3,000	**3,001**	**3,010**	**3,100**	**4,000**
7,213	**7,214**	**7,223**	**7,313**	**8,213**
4,510	4,511	**4,520**	**4,610**	**5,510**
1,281	**1,282**	1,291	**1,381**	**2,281**
1,899	**1,900**	**1,909**	**1,999**	2,899
5,959	**5,960**	**5,969**	6,059	**6,959**

5 Complete the part-whole models.

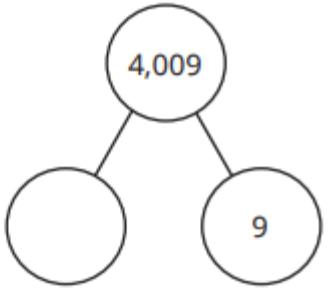
a)



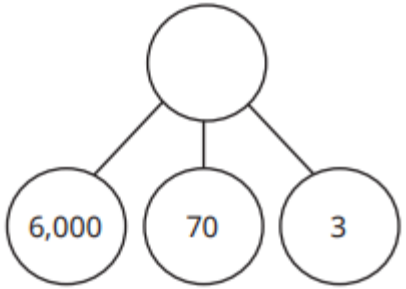
c)



b)



d)



a) 600, 7 in either order
b) 4,000
c) 200, 40, 5 in any order
d) 6,073

L-To be able to read and represent numbers to 10,000.

If you finish:

Filip has made five numbers using the digits 1, 2, 3 and 4

He is using a letter to represent each digit.

Here are his numbers.

AABCD
ACDCB
DCABA
CDADC
BDAAB

Use the clues to work out each number.

- The first number in the list is the greatest number.
- The digits in the fourth number add up to 12
- The third number is the smallest number.

44,231
43,132
13,424
31,413
21,442

Arithmetic questions

ANSWERS	
Addition with Formal Written Methods	**Back to Basics**
1.) 11,208	**5.)** 178
2.) 8,476	**6.)** 41,846
3.) 11,099	**7.)** 6,967
4.) 34,986	**8.)** 1,111

Year 5 | Autumn term | Block 1 – Place value | Step 3

T - Numbers to 100,000

L - To be able to read and represent numbers to 100,000.

Recall

1) Write 5,402 in words.

Five thousand, four hundred and two

2) $3{,}485 - 3{,}000 =$ 485

3) What is 10 more than 8,439? 8,449

4) $4{,}539 + 200 =$ 4,739

L-To be able to read and represent numbers to 100,000.

Hook

Write as many different numbers as you can, using each word no more than once.

You do not need to use all the words each time.

and	four	thousand	one	hundred

Key Questions:

Mrs Jones says that you must use all the words each time. Is he correct?

Mrs Higginson says that she can make the number 100,000. Is this true? How do you know?

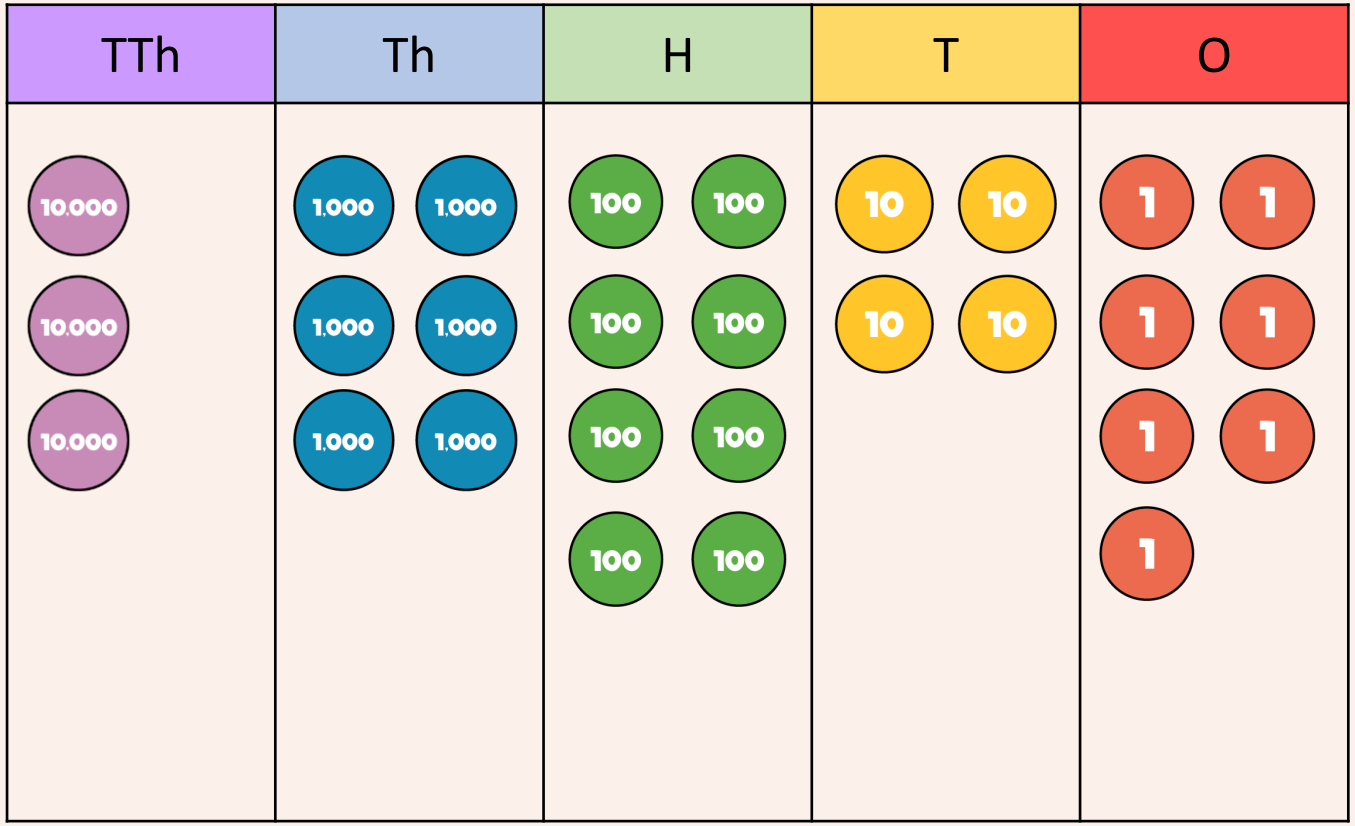
How can you record your answers? Can you think of more than one way?

L-To be able to read and represent numbers to 100,000.

Let's Learn:

36,847

30,000 6,000 800 40 7



Thirty-six thousand, eight hundred and forty-seven

L-To be able to read and represent numbers to 100,000.

Let's Learn:

TTh	Th	H	T	O
10,000 10,000 10,000	1,000 1,000 1,000 1,000 1,000 1,000	100 100 100 100 100 100 100 100	10 10 10 10	1 1 1 1 1 1 1

I'm going to add 3 counters to the tens column.

L-To be able to read and represent numbers to 100,000.

Let's Learn:

TTh	Th	H	T	O
10,000	1,000 1,000	100 100	10 10	1 1
10,000	1,000 1,000	100 100	10 10	1 1
10,000	1,000 1,000	100 100	10 10	1 1
		100 100	10	1

36,847 + 30 = 36,877

L-To be able to read and represent numbers to 100,000.

Let's Learn:

TTh	Th	H	T	O
10,000	1,000 1,000	100 100	10 10	1 1
10,000	1,000 1,000	100 100	10 10	1 1
10,000	1,000 1,000	100 100		1 1
		100 100		1

I'm going to add 3 counters to the hundreds column.

Key Questions:

How many counters can each place value column contain?

What happens if there are 10 counters or more?

L-To be able to read and represent numbers to 100,000.

Let's Learn:

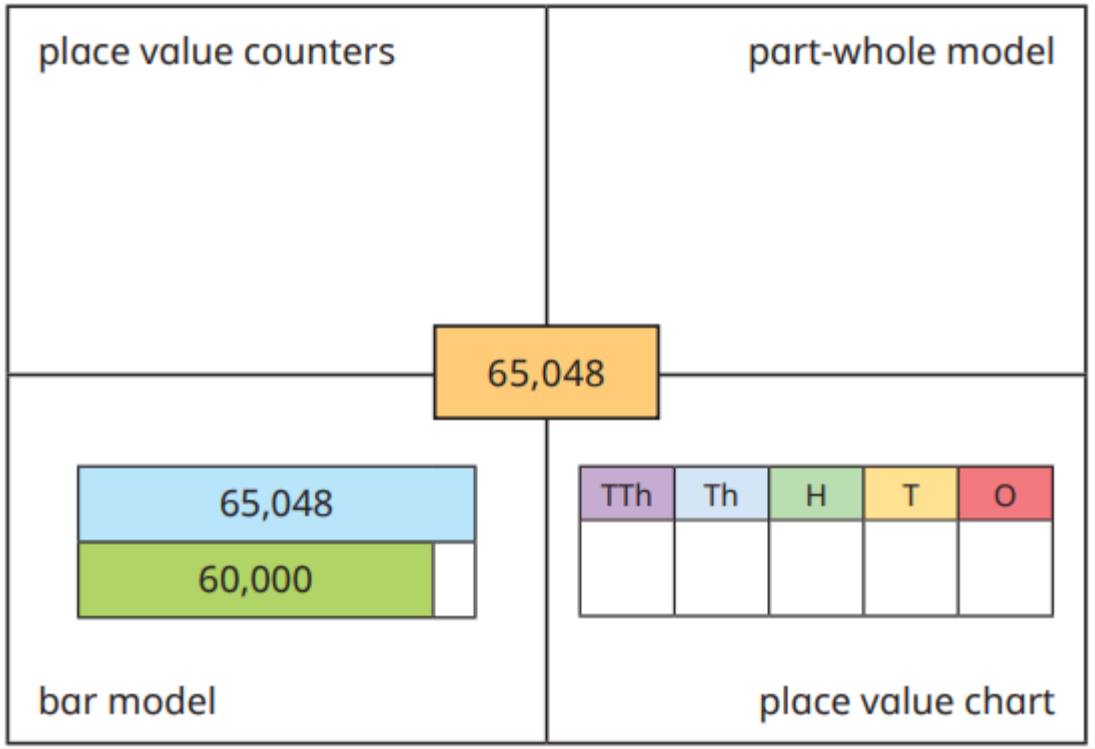
TTh	Th	H	T	O
10,000	1,000	100	10	1
10,000	1,000	100	10	1
10,000	1,000	100	10	1
	1,000	100		1
	1,000	100		1
		100		1
		100		
		100		
		100		

$36,847 + 300 = 37,147$

L-To be able to read and represent numbers to 100,000.

Let's Have a go:

Complete the grid to show the number in different ways.



Key Questions:

What does each digit represent?

How can we represent this number using concrete resources?

How can you represent this number using pictorial manipulatives?

The column before/after the _____column is the_____ column.

L-To
Inde

00,000.

number.

1

a)

TTh	Th	H	T	O
		●●	●	●●
		●●		●●
				●●

b)

TTh	Th	H	T	O
●●	●●	●●		●●
		●		●
				●

a)

67,611	
67,000	611

b)

50,470	
50,000	470

c)

78,319	
8,000	70,319

d)

93,406	
93,006	400

a) 42,000 = 40,000 + 2,000
b) 17,250 = 10,000 + 7,000 + 200 + 50
c) 20,455 = 20,000 + 400 + 50 + 5
d) 70,090 = 60,000 + 10,000 + 90
e) 50,641 = 40,000 + 10,000 + 300 + 341

2 Complete the bar models.

a)

67,611	
67,000	

c)

78,319	
8,000	

b)

50,000	470

d)

93,406	
	400

3 Complete the number sentences.

a) 42,000 = ☐ + 2,000

b) 17,250 = 10,000 + ☐ + ☐ + 50

c) 20,455 = ☐ + ☐ + ☐ + ☐

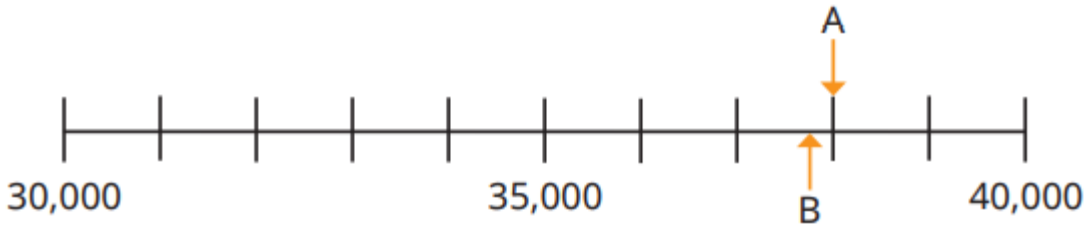
d) 70,090 = ☐ + 10,000 + ☐

e) 50,641 = 40,000 + ☐ + ☐ + 341

L-To be able to read and represent numbers to 100,000.

If you finish:

Here is a number line.

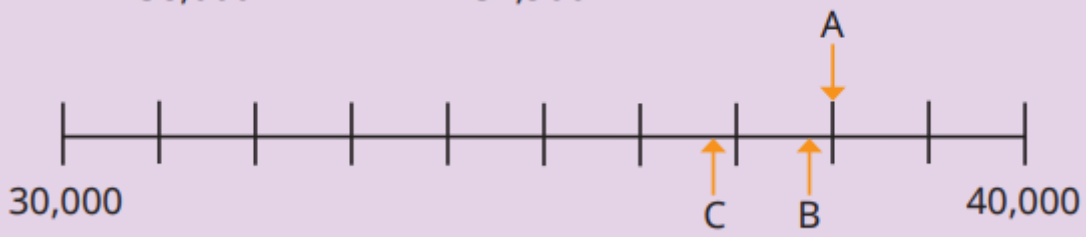


What is the value of A?

B is 100 less than A.
What is the value of B?

C is 1,000 less than B.
Label C on the number line.

A = 38,000 B = 37,900



Arithmetic questions

ANSWERS	
Addition with Formal Written Methods	**Back to Basics**
1.) 11,355	**5.)** 455
2.) 76,764	**6.)** 48,996
3.) 39.5	**7.)** 9,044
4.) 63.5	**8.)** 2,923

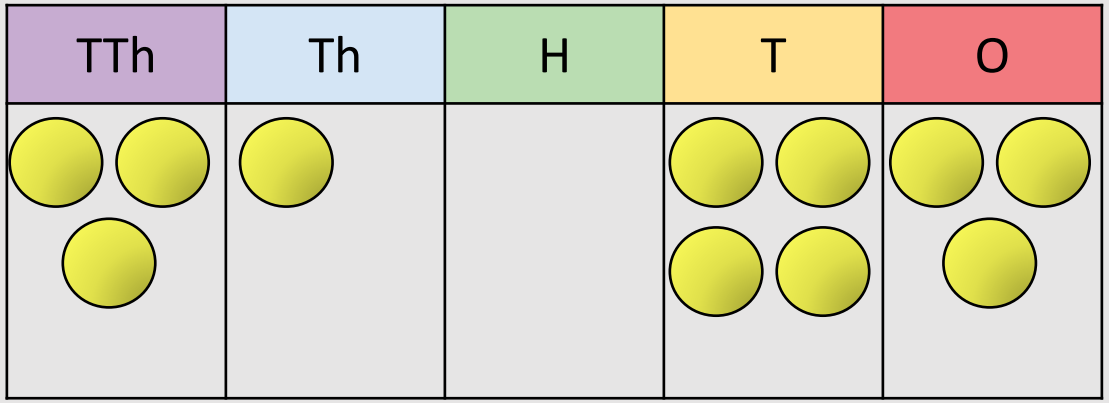
Year 5 | Autumn term | Block 1 – Place value | Step 4

T – Numbers to 1,000,000

L – To be able to read and represent numbers to 1,000,000.

Recall

1) Draw counters to represent 31,043



2) Complete the number sentence.

42,305 = 40,000 + 300 + 2,000 + 5

3) What is the value of the digit 2 in 52,301?

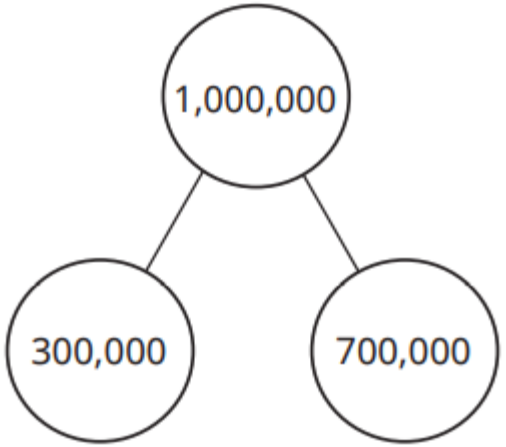
Two thousand / 2,000

L-To be able to read and represent numbers to 1 000,000.

Hook

Here are two ways of partitioning one million into multiples of 100,000

1,000,000	
600,000	400,000



How many other ways can you find to partition one million into multiples of 100,000?

Show your answers as bar models and part-whole models.

Key Questions:

If one million is the whole what could the parts be?

How could place value counters help you partition one million?

Mr Kenny says that he can use his number bonds to 10 to support his working out. Is this true? How does this help?

To be able to read and represent numbers to 1,000,000.

Let's Learn:

What number is shown in the place value chart?

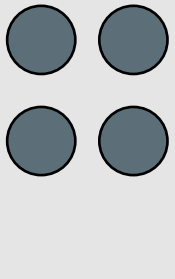
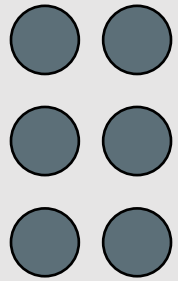
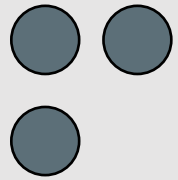
Thousands			Ones		
H	T	O	H	T	O
●● ●●		●● ●● ●●	●● ●	●●	

To be able to read and represent numbers to 1,000,000.

Let's Learn:

What number is shown in the place value chart?

406,320

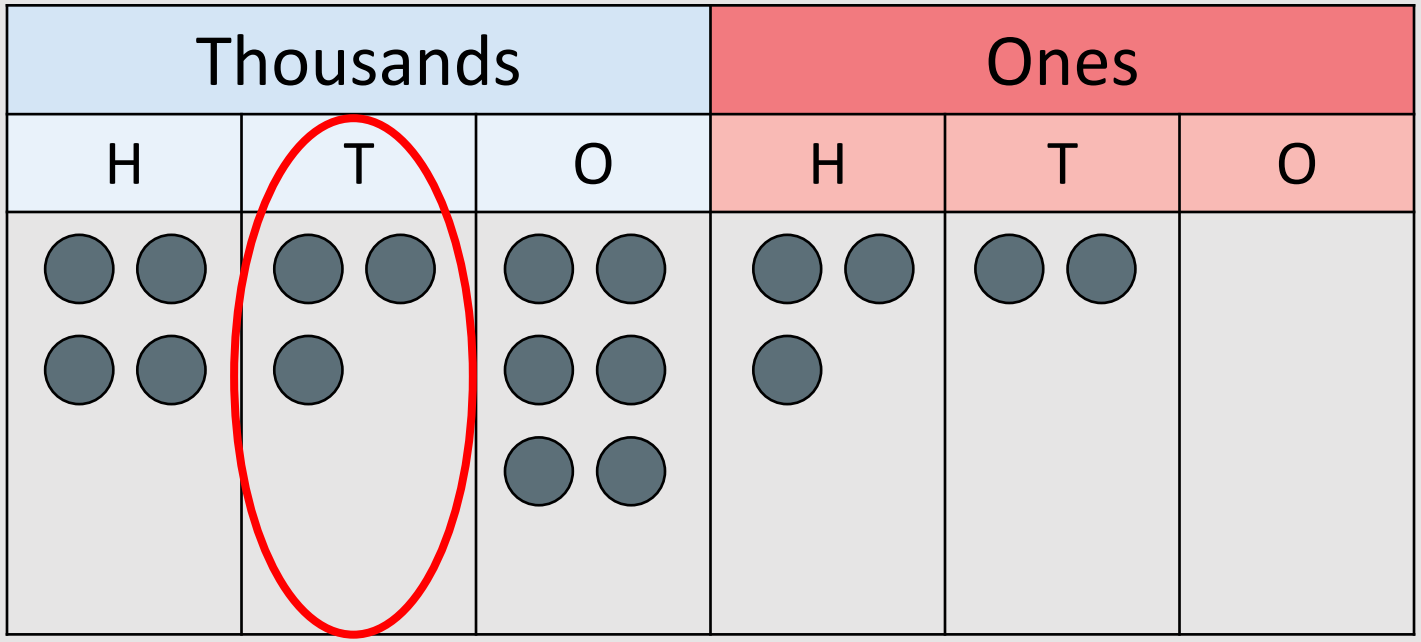
400,000	0	6,000	300	20	0
Thousands			Ones		
H	T	O	H	T	O
					
4	0	6	3	2	0

To be able to read and represent numbers to 1,000,000.

Let's Learn:

What number is shown in the place value chart?

406,320



What will the number be if you add three counters to the ten-thousands column?

436,320

To be able to read and represent numbers to 1,000,000.

Let's Learn:

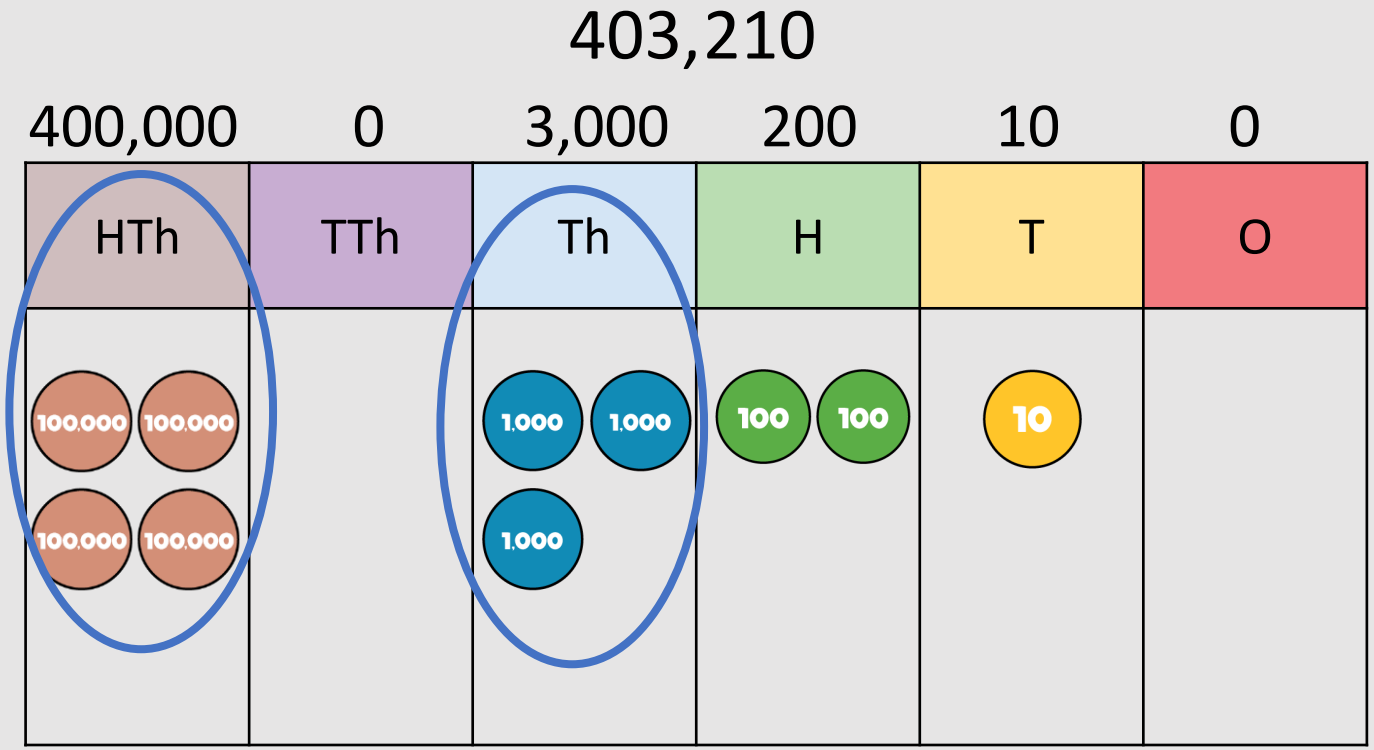
The number is 43,210

HTh	TTh	Th	H	T	O
100,000 100,000 100,000 100,000		1,000 1,000 1,000	100 100	10	

What mistake has Tiny made?

To be able to read and represent numbers to 1,000,000.

Let's Learn:



Tiny did not include 0 as a place holder in the ten thousand column.

To be able to read and represent numbers to 1,000,000.

Let's Have a go:

What number is shown in each place value chart?

Give your answers in numerals.

HTh	TTh	Th	H	T	O
●● ●●	●●	●●	●● ●●	●● ●●	●

Thousands			Ones		
H	T	O	H	T	O
●● ●●	●●	●●	●● ●●	●● ●●	●

What is the same and what is different about these place value charts?

Key Questions:

How have the numbers been represented?

What other models could you use?

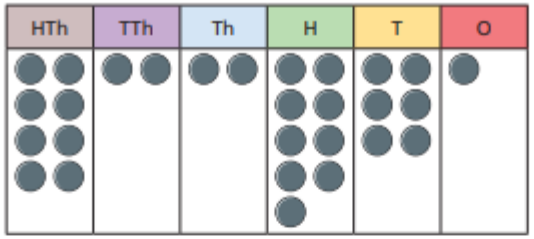
The value of the _____ in _____is _____

To be able to read and represent numbers to 1,000,000

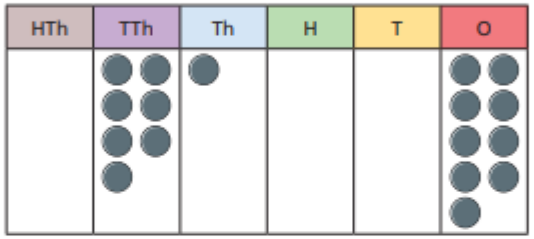
Independent Practice:

1 What numbers are represented in the place value charts?

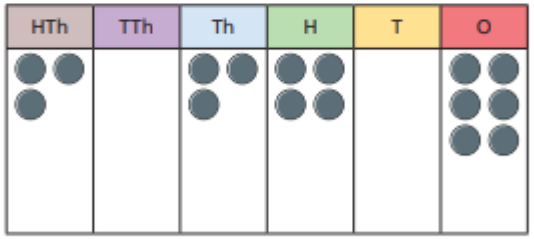
a)



b)



c)



2 Make these numbers in a place value chart.

a) 104,379 **b)** 804,363 **c)** 92,715 **d)** 690,018

What is the same about all the numbers you have made?

4

a) 1 counter in the hundred-thousands column, 4 counters in the thousands colum
counters in the hundreds column, 7 counters in the tens column and 9 counters i
the ones column

b) 8 counters in the hundred-thousands column, 4 counters in the thousands colum
counters in the hundreds column, 6 counters in the tens column and 3 counters i
the ones column

c) 9 counters in the ten-thousands column, 2 counters in the thousands column, 7
counters in the hundreds column, 1 counter in the tens column and 5 counters ir
ones column

d) 6 counters in the hundred-thousands column, 9 counters in the ten-thousands
column, 1 counter in the tens column and 8 counters in the ones column

multiple possible answers, e.g.:
They all have a digit total of 24
They are all less than a million.
They are all greater than 90,000

5

a) **295** 2,095 **19,216** 200,000

b) three numbers with 2 in the hundreds column, e.g. 1,250 10,299 999,299

6

a) 300 (3 hundreds)
b) 300 (3 hundreds)
c) 3 (3 ones)
d) 300,000 (3 hundred-thousands)
e) 30,000 (3 ten-thousands)
f) 3,000 (3 thousands)

To be able to read and represent numbers to 1,000,000.

If you finish:

a) Circle all the numbers that have 2 in the hundreds column.

295 **2,095** **19,216** **200,000**

b) Write three more numbers that have 2 in the hundreds column.

Each number should have a different number of digits.

a) 295 2,095 19,216 200,000

b) three numbers with 2 in the hundreds column, e.g. 1,250 10,299 999,299

Dora is thinking of a 6-digit number.

- It is an odd number.
- The smallest digit has the greatest value.
- The greatest digit has the smallest value.
- The first and last digits add up to 10
- The first three digits also add up to 10
- The last three digits add up to 20
- The two middle digits are the same.

What could Dora's number be?

Use th rkings.

possible solutions:
127,749
136,659
145,569
154,479
163,389

Arithmetic questions

ANSWERS	
Addition with Formal Written Methods	**Back to Basics**
1.) 10,996	**5.)** 434
2.) 62.3	**6.)** 17,442
3.) 77.56	**7.)** 14,220
4.) 22.47	**8.)** 3,983

Year 5 | Autumn term | Block 1 – Place value | Step 5

T-Read and write numbers to 1,000,000

L-To be able to read and write numbers to 1,000,000.

Recall

1) Draw counters to represent 131,002

HTh	TTh	Th	H	T	O
●	● ● ●	●			● ●

2) How many thousands are there in 68,282?

Sixty-eight / 68

3) What is the value of the digit 3 in 452,392?

3 hundred / 300

4) Write one million in numerals. 1,000,000

L-To be able to read and write numbers to 1,000,000.

Hook

Use the digit cards and the place value chart to make different 6-digit numbers.

2	4	1	9	0	0

HTh	TTh	Th	H	T	O

Key Questions:

How many alternative ways can you record your answer?

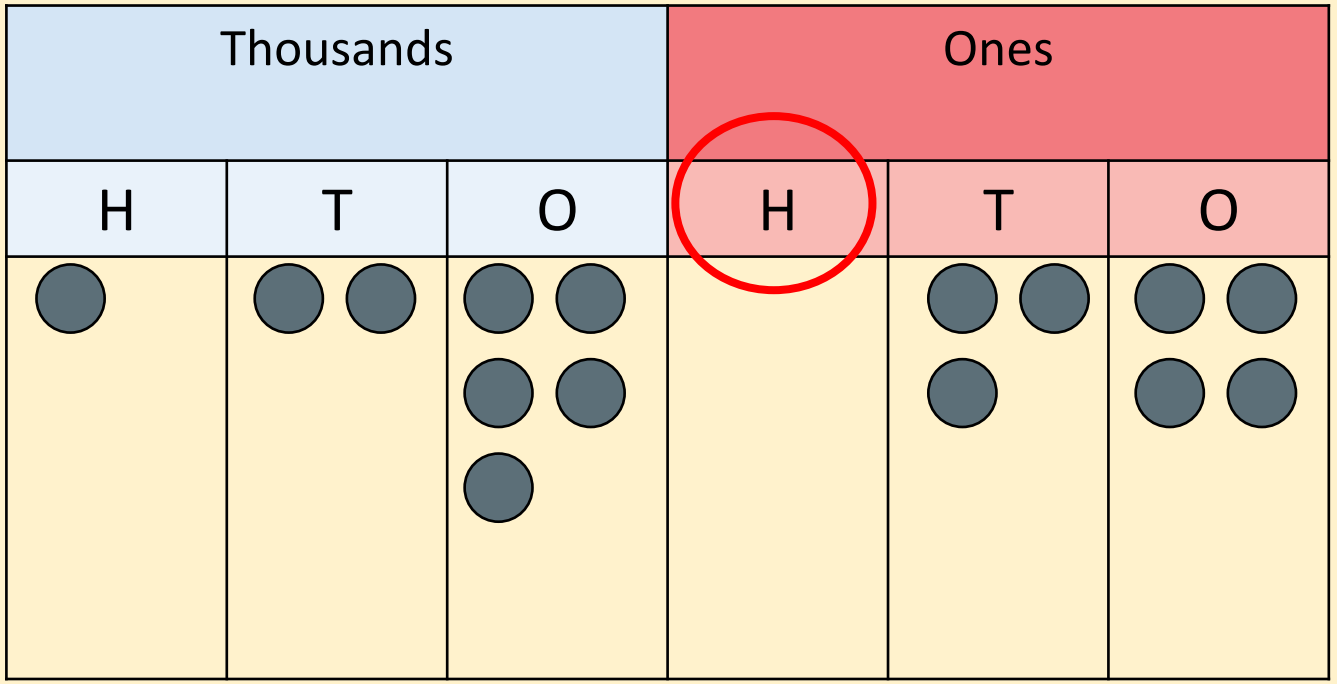
Mr Latham says that he can write his answer using words. What would this look like?

L-To be able to read and write numbers to 1,000,000.

Let's Learn:

Write the number represented in numerals.

125,034



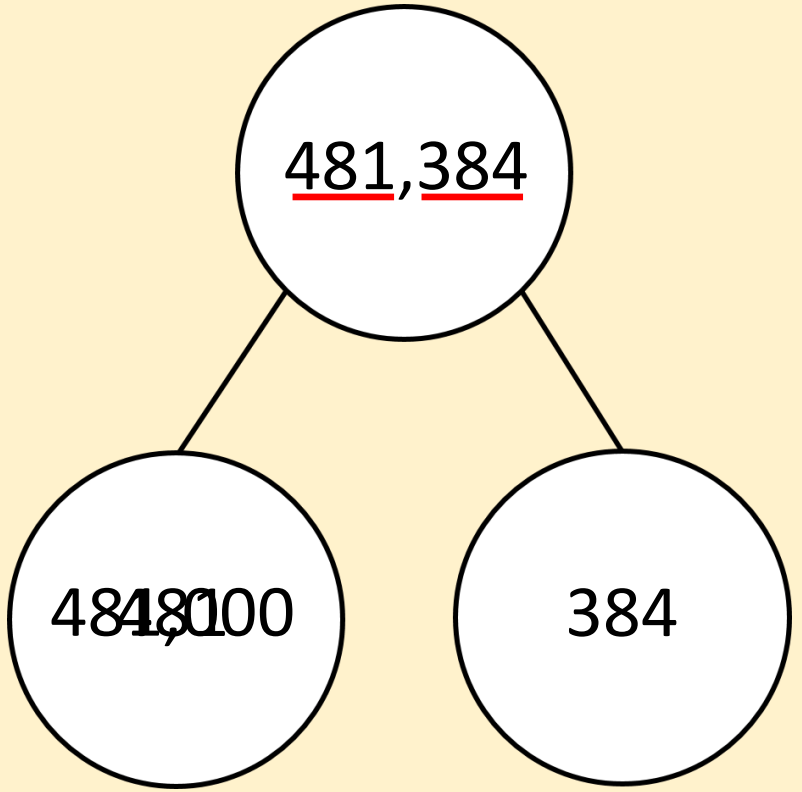
Write the number represented in words.

One hundred and twenty-five thousand and thirty-four.

L-To be able to read and write numbers to 1,000,000.

Let's Learn:

Complete the part-whole model and write the number in words.



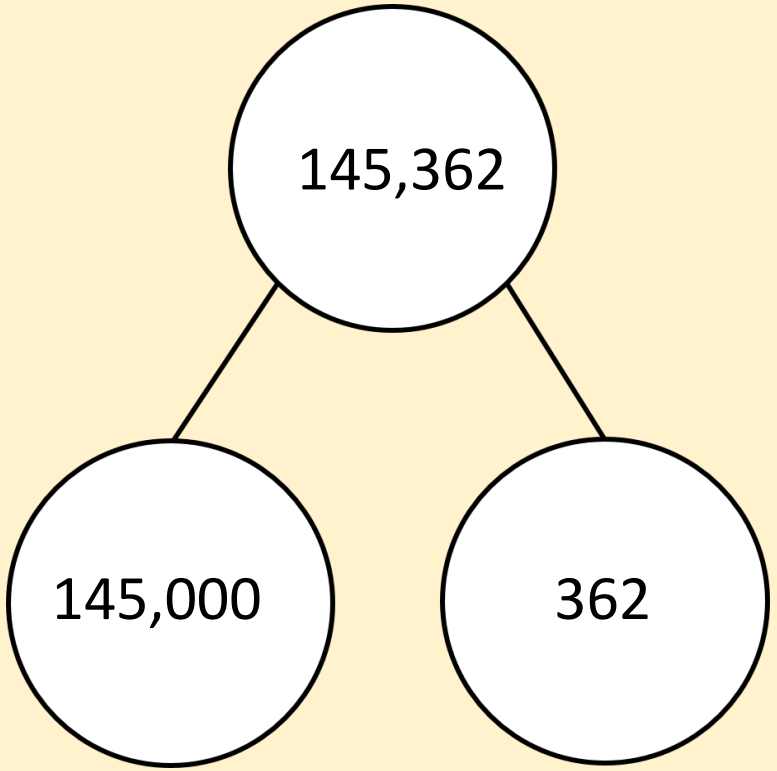
How does the part-whole model help you to write the number?

Four hundred and eighty-one thousand, three hundred and eighty-four.

L-To be able to read and write numbers to 1,000,000.

Let's Learn:

Scott is using a part-whole model to help write the number 145,362 in words.



One hundred and forty-five thousand, three hundred and sixty-two.

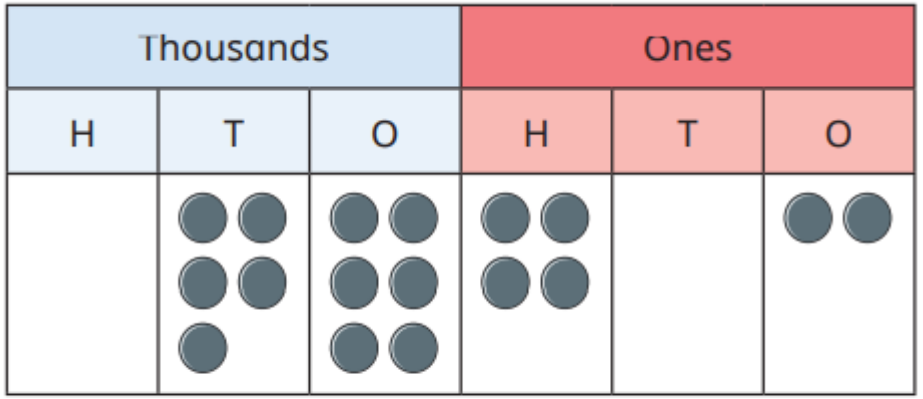
What mistake has Scott made?

L-To be able to read and write numbers to 1,000,000.

Let's Have a go:

1

56,402 is shown in the place value chart.



Write the number 56,402 in words.

How does the place value chart help you?

2

A number is made up of 2 ten-thousands, 5
7 ones.

Show the number on a place value chart.

Write the number in words and numerals.

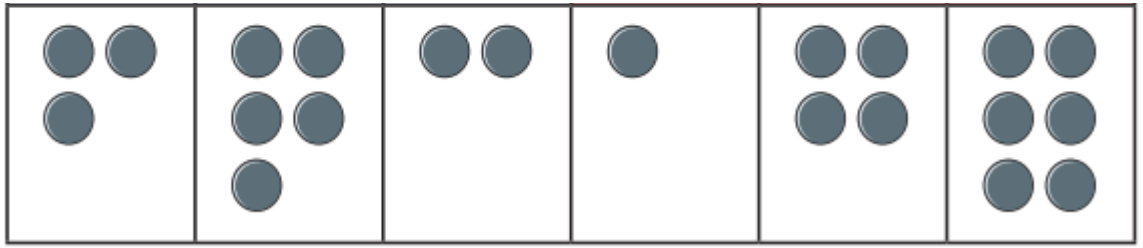
L-To be able to read and write numbers to 1,000,000.

Independent Practice:

a) 124,361
b) 405,984
c) 450,904

1 What number is represented?

352,146
three hundred and fifty-two thousand, one hundred and forty-six



Write your answer in numerals.

Write your answer in words.

2 Write the numbers in words.

a) 436,634
b) 463,643
c) 207,845

a) four hundred and thirty-six thousand, six hundred and thirty-four
b) four hundred and sixty-three thousand, six hundred and forty-three
c) two hundred and seven thousand, eight hundred and forty-five

3 Write the numbers in numerals.

a) one hundred and twenty-four thousand, three hundred and sixty-one

b) four hundred and five thousand, nine hundred and eighty-four

c) four hundred and fifty thousand, nine hundred and four

4 **a)** Eva has written the number 231,405 in words.

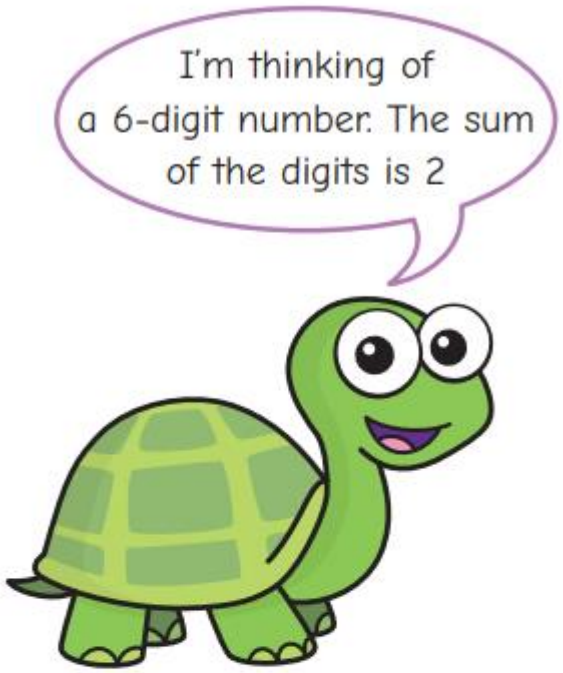
231,405

a) The part-whole model shows the number before the comma and the number after the comma when the number is written in words. The number has been partitioned into the thousands part and the ones part which helps to write the number.

How does the part-whole model help Eva?

L-To be able to read and write numbers to 1,000,000.

If you finish:



Find all the possible numbers Tiny could be thinking of.

Give your answers in words and numerals.

Investigate with different digit sums.

What do you notice?

200,000
two hundred thousand

110,000
one hundred and ten thousand

101,000
one hundred and one thousand

100,100
one hundred thousand, one hundred

100,010
one hundred thousand and ten

100,001
one hundred thousand and one

Arithmetic questions

ANSWERS	
Subtraction with Formal Written Methods	**Back to Basics**
1.) 326	**5.)** 855
2.) 1,240	**6.)** 9,894
3.) 283	**7.)** 8,064
4.) 2,603	**8.)** 3,239

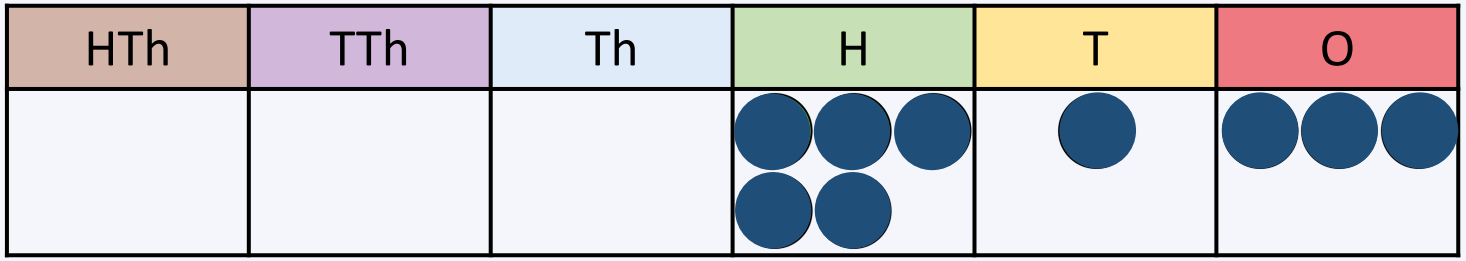
Year 5 | Autumn term | Block 1 – Place value | Step 6

T- Powers of 10

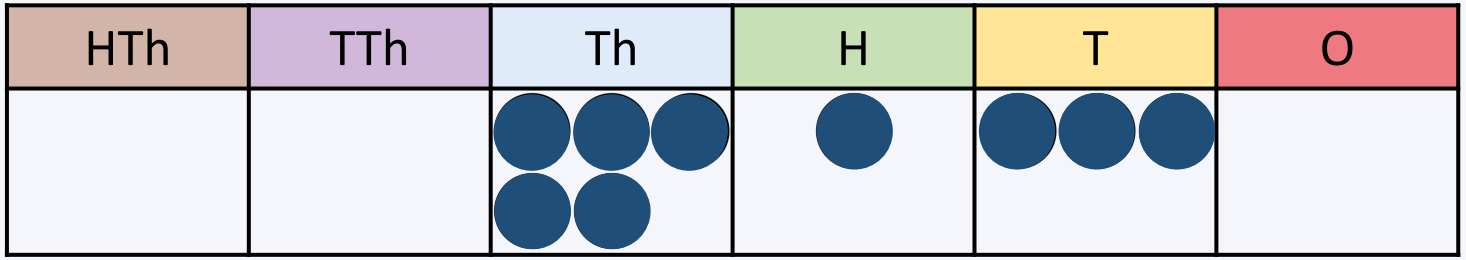
L-To be able to explore the relationship between numbers in different columns.

Recall

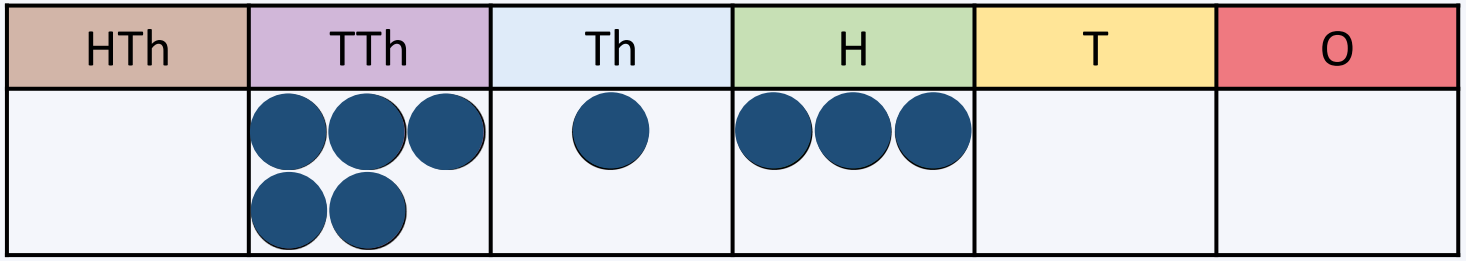
1) Represent the number 513 on the chart.



2) Represent the number 5,130 on the chart.



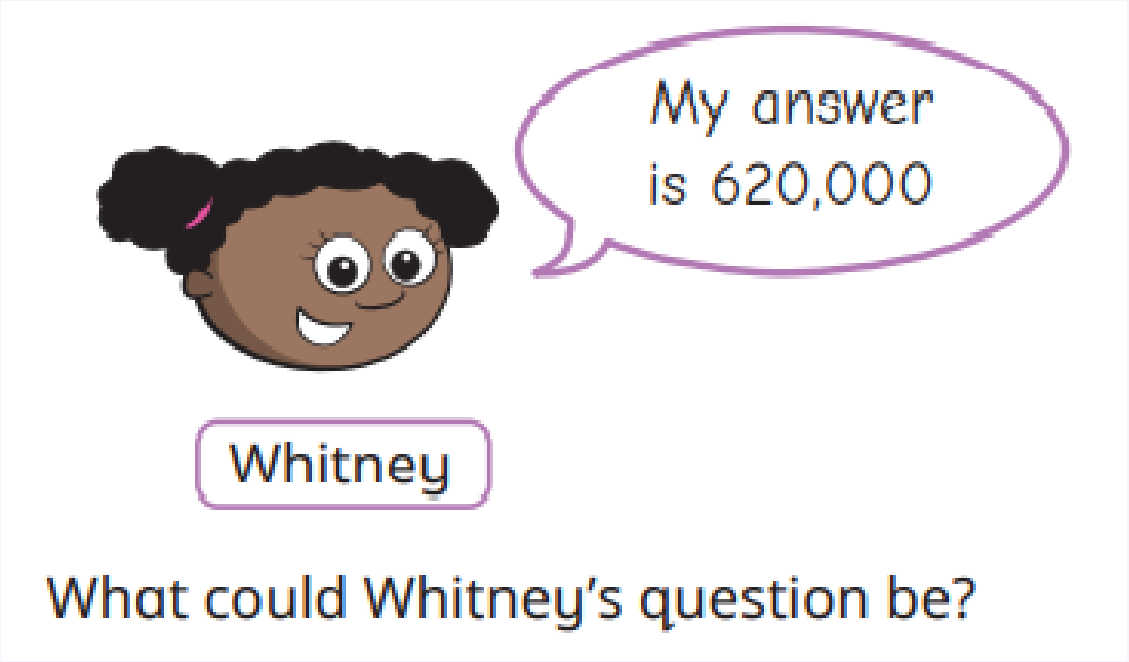
3) Represent the number 51,300 on the chart.



4) What do you notice? Same number of counters
Moved 1 column to the left

L-To be able to explore the relationship between numbers in different columns..

Hook:



Mr Kenny says that he thinks Whitney has multiplied 620 by 1000. Is he correct? How do you know?

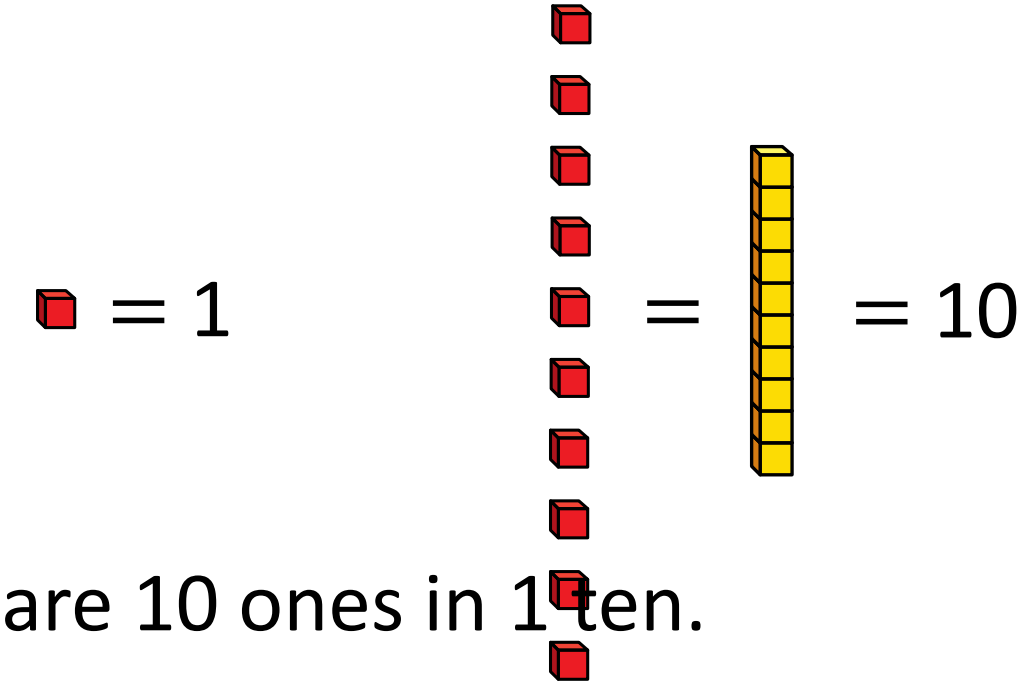
Mr Smith says he used a Gattegno chart to help him work out a solution. How could this help? What patterns can you see in the Gattegno chart?
If you move a digit one place to the left in a place value chart, how many times greater is the value of the digit?

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

L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

How many ones are there in 10?

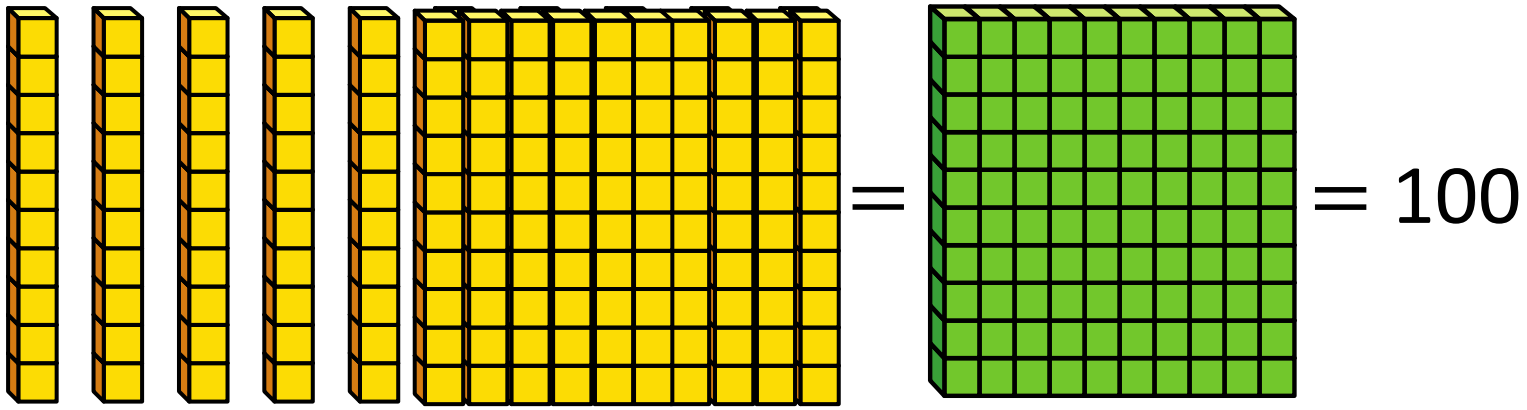


There are 10 ones in 1 ten.

L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

How many tens are there in 100?

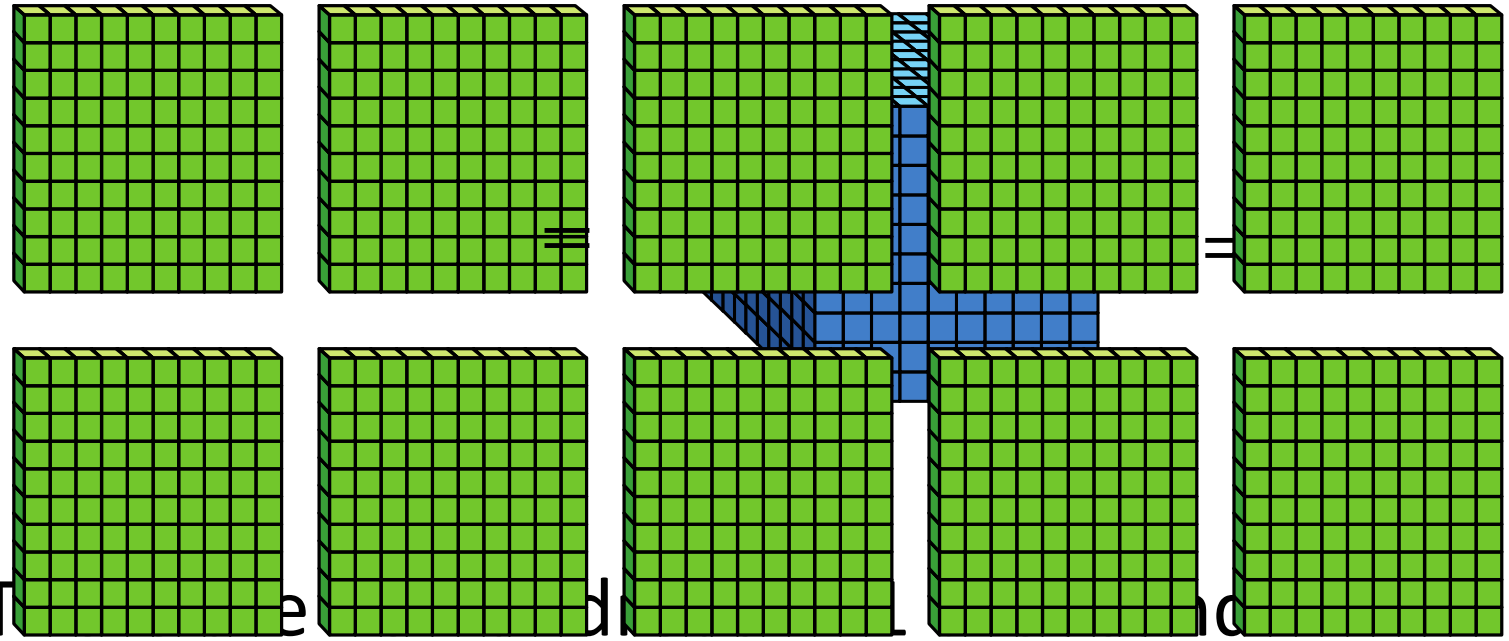


There are 10 tens in 1 hundred.

L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

How many hundreds are there in 1,000?



L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

There are 10 ones in 1 ten.

There are 10 tens in 1 hundred.

There are 10 hundreds in 1 thousand.

HTh	TTh	Th	H	T	O

What do you notice?

How many thousands are there in 1 hundred-thousand? 10

L-To be able to explore the relationship between numbers in different columns..

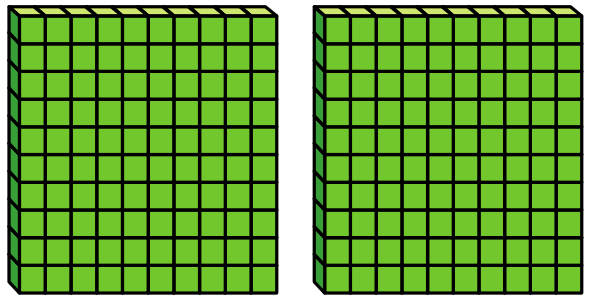
Let's Learn:

There are 10 ones in 1 ten.

There are 10 tens in 1 hundred.

There are 10 hundreds in 1 thousand.

How many tens are there in 200? 20



10 tens 10 tens

L-To be able to explore the relationship between numbers in different columns..

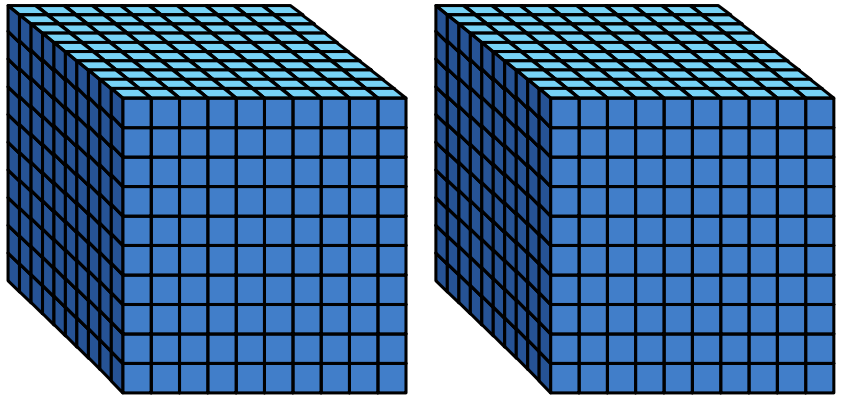
Let's Learn:

There are 10 ones in 1 ten.

There are 10 tens in 1 hundred.

There are 10 hundreds in 1 thousand.

How many hundreds are there in 2,000? 20



10 hundreds 10 hundreds

L-To be able to explore the relationship between numbers in different columns..

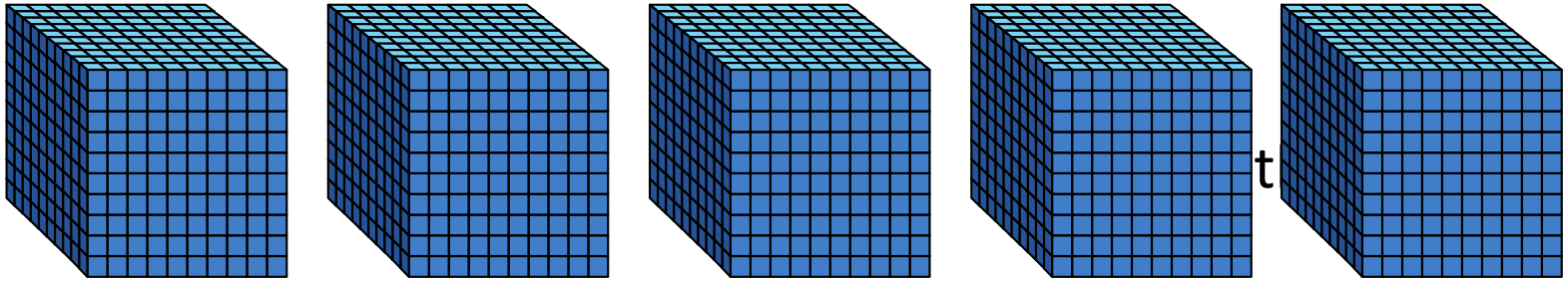
Let's Learn:

There are 10 ones in 1 ten.

There are 10 tens in 1 hundred.

There are 10 hundreds in 1 thousand.

How many hundreds are there in 5,000?



There are 10 hundreds in 1,000 and 5 thousands in 5,000

This means there are 50 hundreds in 5,000

L-To be able to explore the relationship between numbers in different columns..

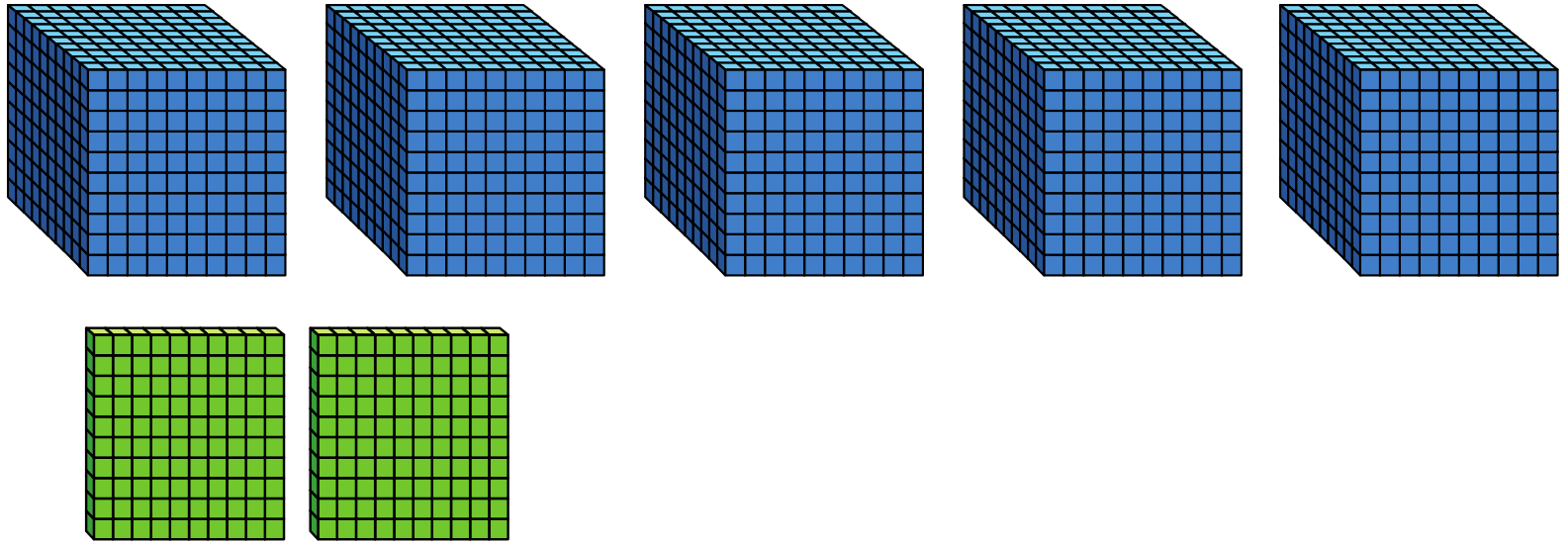
Let's Learn:

There are 10 ones in 1 ten.

There are 10 tens in 1 hundred.

There are 10 hundreds in 1 thousand.

How many hundreds are there in 5,200? 52



L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

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

What number is 10 times the size of 3?

L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

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

What number is 10 times the size of 6?

What do you notice?

If the counter moves up 1 row then the number is 10 times the size.

L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

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

What number is 100 times the size of 6?

What do you notice?

If the counter moves up 2 rows then the number is 100 times the size.

L-To be able to explore the relationship between numbers in different columns..

Let's Learn:

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

To find the number 1,000 times the size, the counter will move 3 rows up _____.

L-To be able to explore the relationship between numbers in different columns..

Let's Have a Go:

1 Make the number 425 on a place value chart.

Thousands			Ones		
H	T	O	H	T	O

Now make the number 4,250

What is the same and what is different?

2 What number is shown on the Gattegno chart?

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

Use the chart to find the number 100 times the size of the number shown.

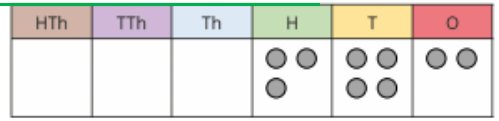
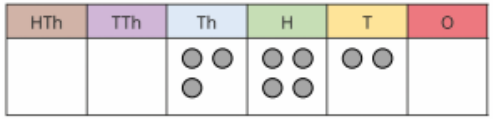
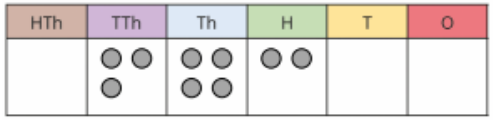
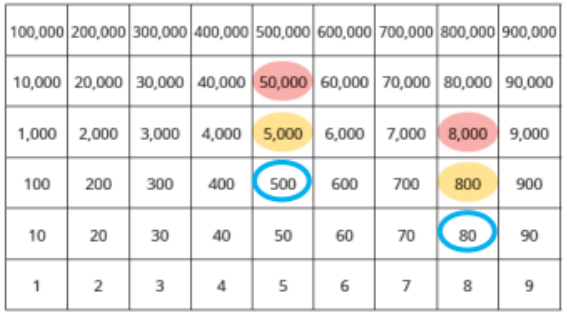
Use the chart to make the number one-tenth the size of the number shown.

There are _____hundreds in 1,000 and _____thousands in _____.

This means there are_____ hundreds in_____.

L- To be able to explore the relationship between numbers in different columns..

Independent Practice:

Question	Answer
1	a)  b)  c)  The pattern of counters in the columns is the same. In each part, the counters are one column to the left of the previous part.
2	a) 10 b) 10 c) 10 d) 10 All the answers are 10
3	a) 20 b) 40 c) 43 d) 47
4	a)  b) 58,000 is 10 times the size of 5,800 5,800 is 10 times the size of 580 580 is 10 times the size of 58 5,800 is one-tenth the size of 58,000 58,000 is one-tenth the size of 580,000

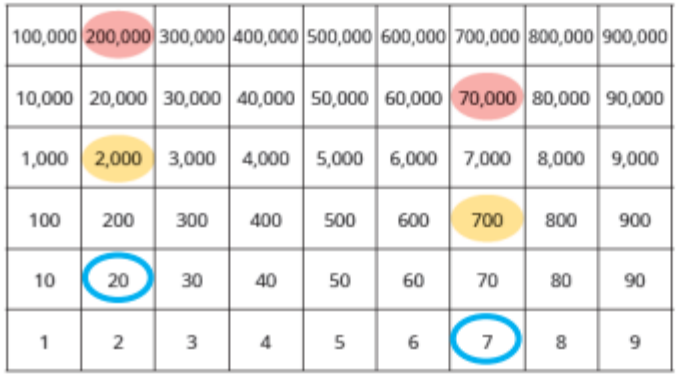
many hundreds are there in 2,000?

many hundreds are there in 4,000?

many hundreds are there in 4,300?

5 The Gattegno chart shows the numbers 270,000 and 2,700

100,000	200,000	300,000	400,000	500,000	600,000	700,000	800,000	900,000

Question	Answer
5	a)  b) 270,000 is 100 times the size of 2,700 27 is one-hundredth the size of 2,700
6	a) 400 cm b) 40,000 cm c) 400,000 cm d) 440,000 cm

) is ____ times the size of 580

____ is 10 times the size of 58

) is one-tenth the size of ____

)0 is one-tenth the size of ____

a) How many centimetres are there in 4 m? ____ cm

b) How many centimetres are there in 400 m? ____ cm

c) How many centimetres are there in 4,000 m? ____ cm

d) How many centimetres are there in 4,400 m? ____ cm

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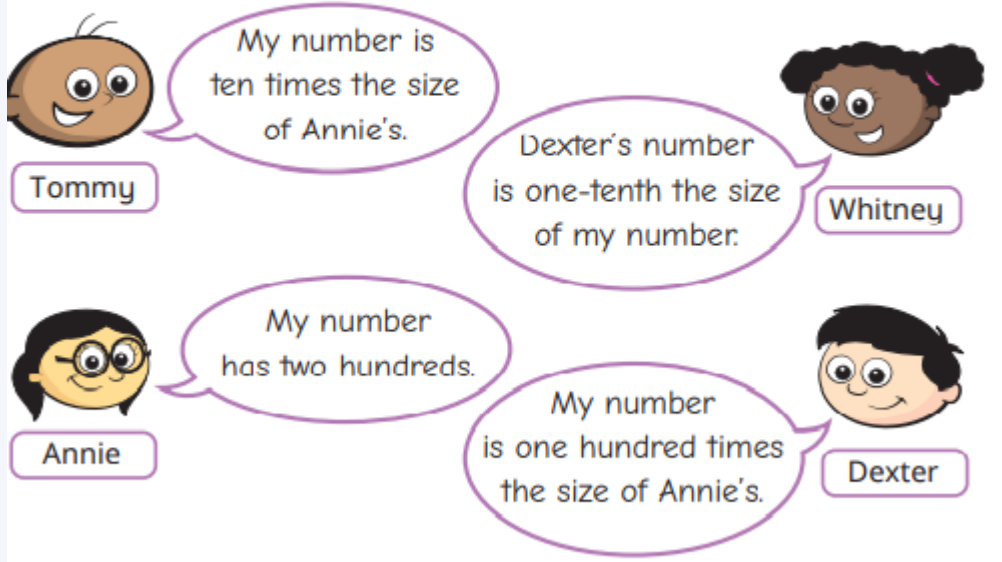
L-To be able to explore the relationship between numbers in different columns..

If you finish:

The children choose one of these number cards each.

29,000	290	2,900	290,000



Which number does each child have?

Tommy	2,900	Whitney	290,000
Annie	290	Dexter	29,000

Arithmetic questions

ANSWERS	
Subtraction with Formal Written Methods	**Back to Basics**
1.) 494	**5.)** 732
2.) 291	**6.)** 30,684
3.) 3,880	**7.)** 13,163
4.) 1,901	**8.)** 2,199

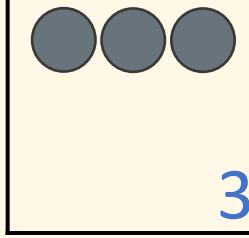
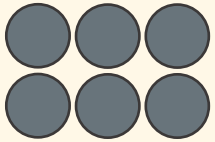
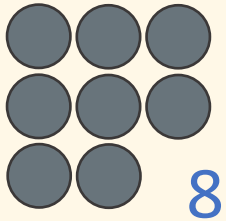
Year 5 | Autumn term | Block 1 – Place value | Step 7

T – 10/100/1,000/10,000/100,000 more or less

L – To be able to make and identify patterns in numbers.

Recall

1) What number is represented? 312,368

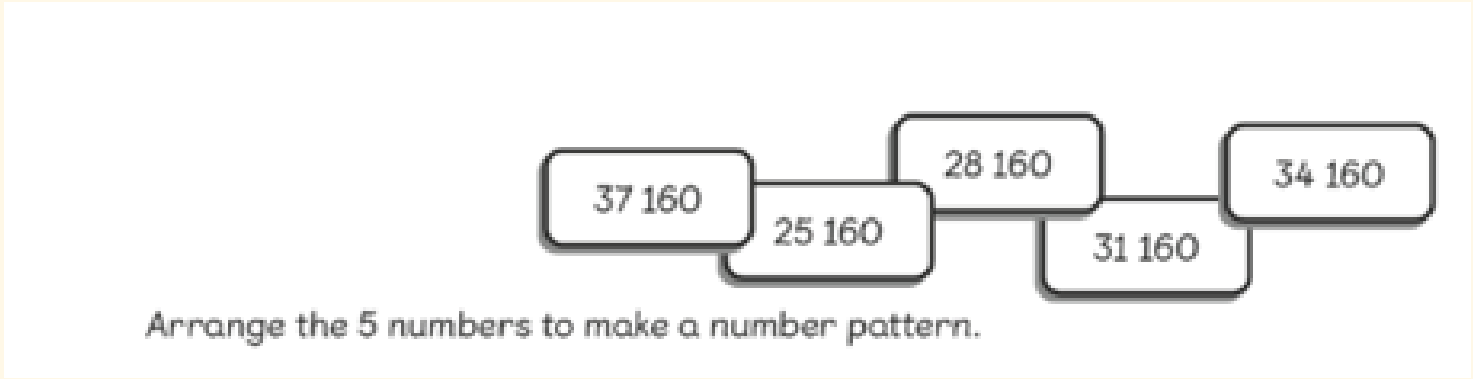
Thousands			Ones		
H	T	O	H	T	O
 3	1	2	3	 6	 8

2) What number is represented? 174,308

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

L-To be able to make and identify patterns in numbers.

Hook



Key Questions:
How can you arrange these numbers?
Do they make a pattern?
Can you spot a pattern?
What number comes next?
How can you be sure?

L-To be able to make and identify patterns in numbers.

Let's Learn:

1 25 160, 28 160, 31 160, 34 160, 37 160

Add 3 thousand to get the next number.

Each number is 3 thousand more than the number before it.
What number comes after 37 160 in this number pattern?

I wonder what the tenth number is.

Look at the thousands.

25
28
31
34
37
□

The next number is □.

2 25 160, 65 160, 105 160, 145 160, ...

What is the next number in this number pattern?

Add 40 thousand to get the next number.

Each number is 4 ten thousands more than the number before it.

Look at the ten thousands.

2 → 4
6 → 4
10 → 4
14 → 4
□

Look at the thousands.

25 → 40
65 → 40
105 → 40
145 → 40
□

Key Questions:

What other patterns can you make?
Can you come up with a rule for the patterns?

To be able to make and identify patterns in numbers.

Let's Learn:

Complete the counting sequence.

10 more

430	440	450	460	470	480	490	500

432	442	452	462	472	482	492	502

3,432	3,442	3,452	3,462	3,472	3,482	3,492	3,502

What do you notice?

To be able to make and identify patterns in numbers.

Let's Learn:

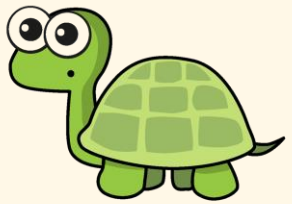
Complete the counting sequence.

100 less

3,740	3,640	3,540	3,440	3,340	3,240	3,140	3,040

2,562	2,462	2,362	2,262	2,162	2,062	1,962	1,862

Do you agree with Tiny?



To be able to make and identify patterns in numbers.

Let's Learn:

Complete the counting sequence.

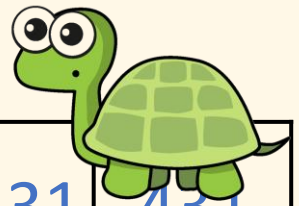
100 less

3,740	3,640	3,540	3,440	3,340	3,240	3,140	3,040

2,562	2,462	2,362	2,262	2,162	2,062	1,962	1,862

1,000 less

Do you agree with Tiny?



7,431	6,431	5,431	4,431	3,431	2,431	1,431	431

To be able to make and identify patterns in numbers.

Let's Learn:

6,135 7,135 8,135 9,135 10,135

What's stayed the same?

The hundreds, tens and ones digits

What's changed?

The thousands digits

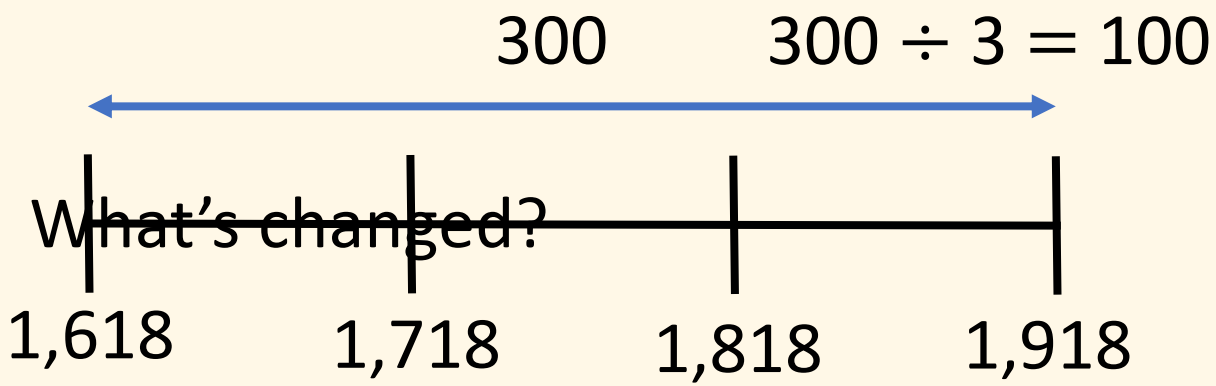
It is 1 thousand greater each time

To be able to make and identify patterns in numbers.

Let's Learn:

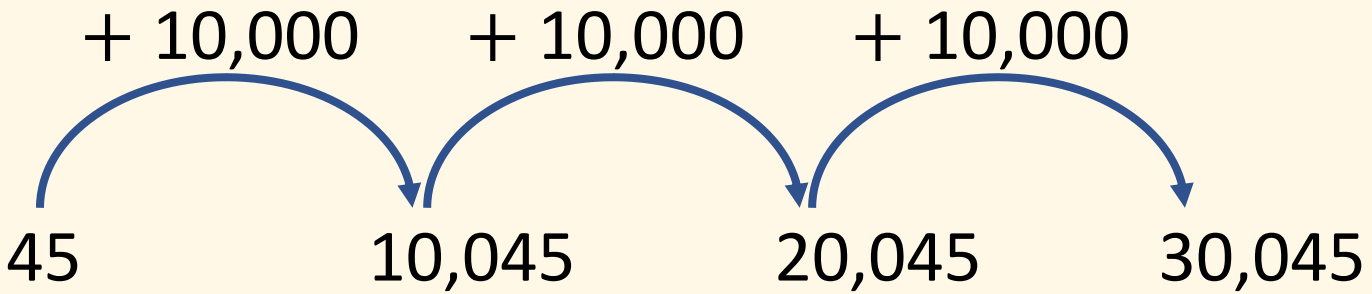
1,618 1,718 1,818 1,918 2,018

What's stayed the same?



To be able to make and identify patterns in numbers.

Let's Learn:

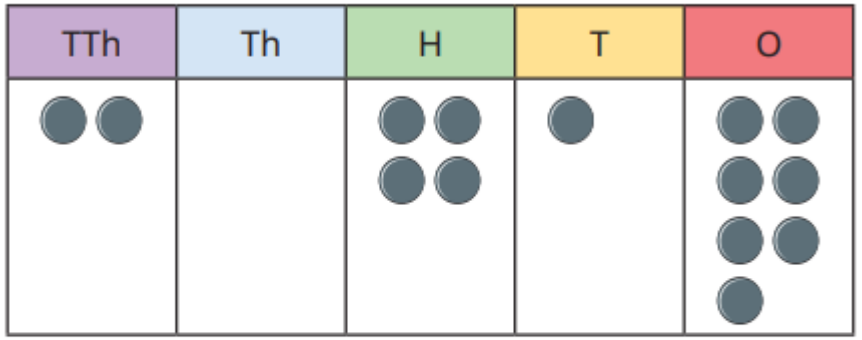


This sequence is counting up in 10,000s.

To be able to make and identify patterns in numbers.

Let's Have a go:

1 20,417 is shown in the place value chart.



What is 100 more than 20,417?

What is 10 less than 20,417?

What is 1,000 less than 20,417?

2 Complete the number tracks.

663	673		693		713	

7,200		7,000			

Key Questions:

How can you use a place value chart to find 10/100/1,000 ... more/less than a given number?

How can you use a Gattegno chart to find 10/100/1,000 ... more/less than a given number?

How many digits of the number will change if you add 10/100/1,000 ... to the given number?

To be able to make and identify patterns in numbers.

In: Practice:

a) 27 57
The numbers are increasing by 10
b) 159 129 119
The numbers are decreasing by 10
c) 575 775 975 1,075
The numbers are increasing by 100

1 and describe what is happening.

a)

7	17		37	47		67

b)

169		149	139			109

c)

475		675		875		

Number	10 more	100 more	1,000 more	10,000 more	100,000 more
25	35	125	1,025	10,025	100,025
250	260	350	1,250	10,250	100,250
2,500	2,510	2,600	3,500	12,500	102,500
25,000	25,010	25,100	26,000	35,000	125,000
250,000	250,010	250,100	251,000	260,000	350,000

Talk about it with a partner.

3 Count up in 1,000s starting from 6,240

Count up in 10,000s starting from 6,240

Count up in 100,000s starting from 6,240

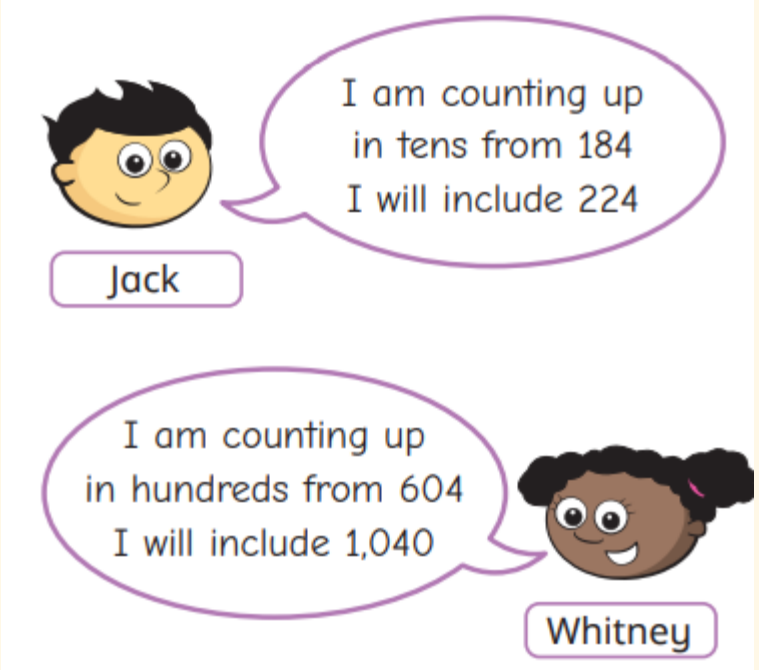
4 Correct the mistake in each number sequence.

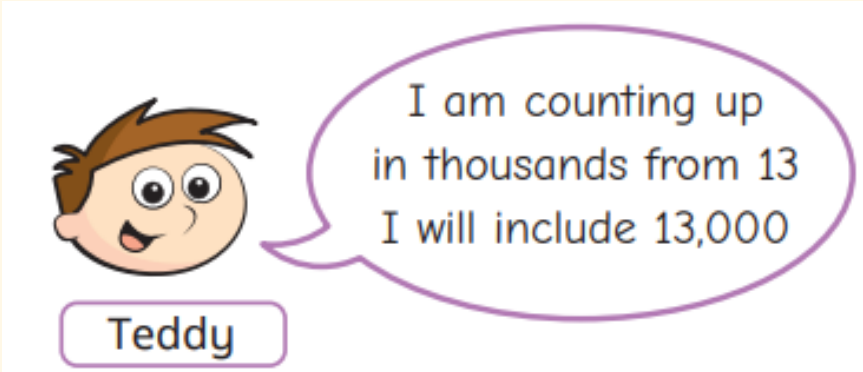
7,875 , 8,875 , 9,875 , 11,875 , 12,875 , 13,875

864,664 , 764,664 , 664,664 , 554,664 , 444,664

To be able to make and identify patterns in numbers.

If you finish:





Are the children correct?

Explain how you know.

Jack is correct.

Whitney is incorrect. All her numbers will end in 04

Teddy is incorrect. All his numbers will end in 13

Arithmetic questions

ANSWERS	
Subtraction with Formal Written Methods	**Back to Basics**
1.) 2,087	**5.)** 2,131
2.) 3,693	**6.)** 45,017
3.) 4,919	**7.)** 7,374
4.) 1,680	**8.)** 2,211

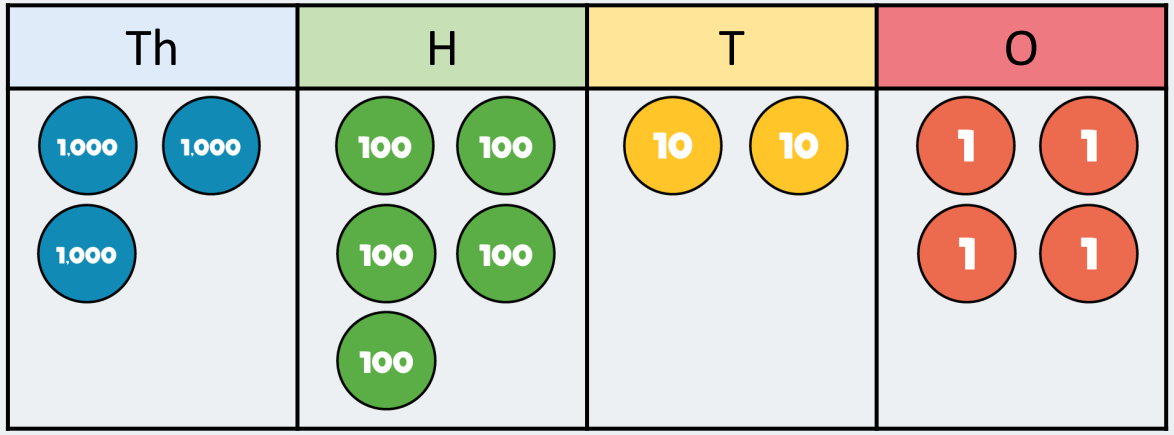
Year 5 | Autumn term | Block 1 – Place value | Step 8

T-Partition numbers to 1,000,000

L-To be able to partition numbers to a million.

Recall

1) What number is represented? 3,524



2) How many tens are there in 100? 10

How many tens are there in 200? 20

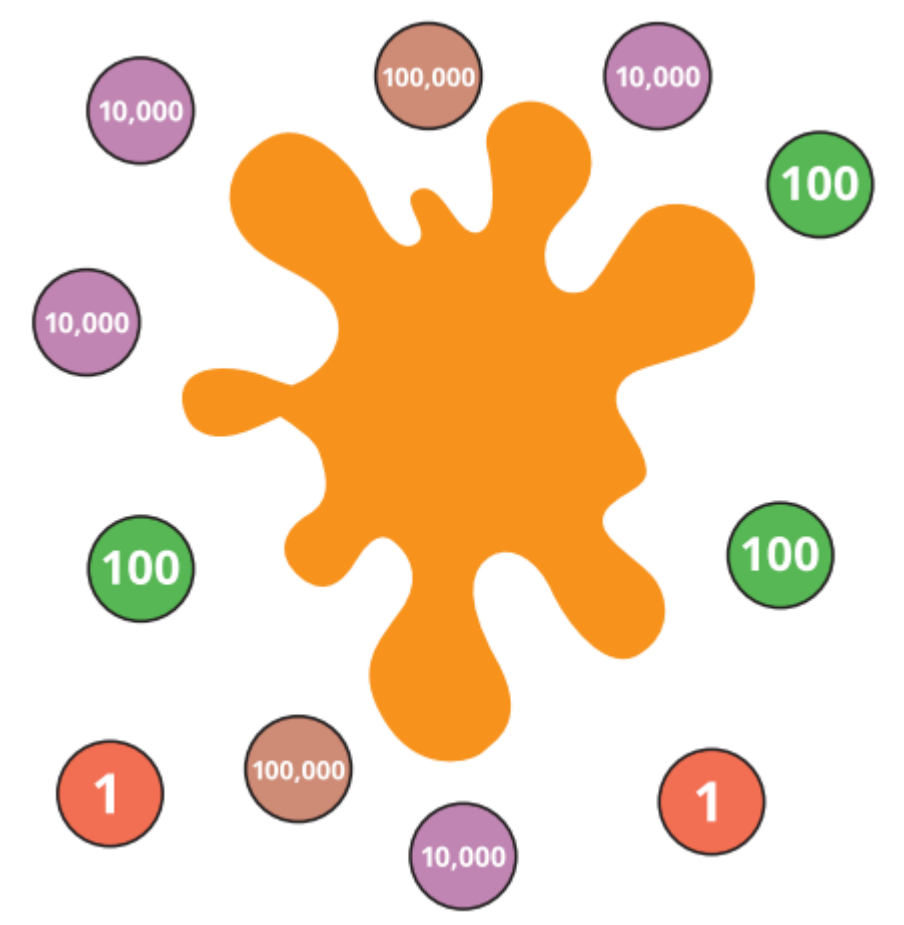
How many tens are there in 400? 40

How many tens are there in 420? 42

How many hundreds are there in 4,200? 42

L-To be able to partition numbers to a million.

Hook:



Key Questions:

Mrs Jennings says the total value of the counters is 265,312

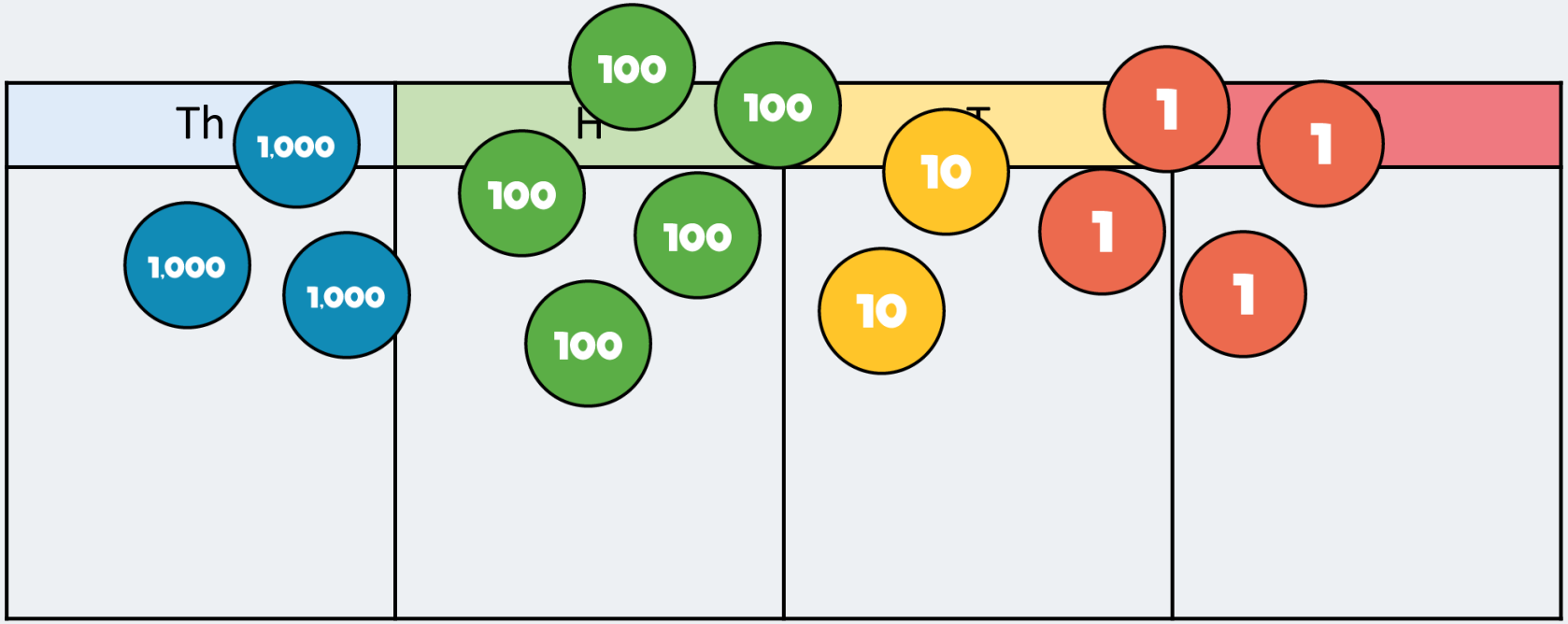
What place value counters could be hidden?

Mr Kenny says that there is a hundred thousand counter under the splat. Is he correct? How do you know?

Can you find more than one solution?

L-To be able to partition numbers to a million.

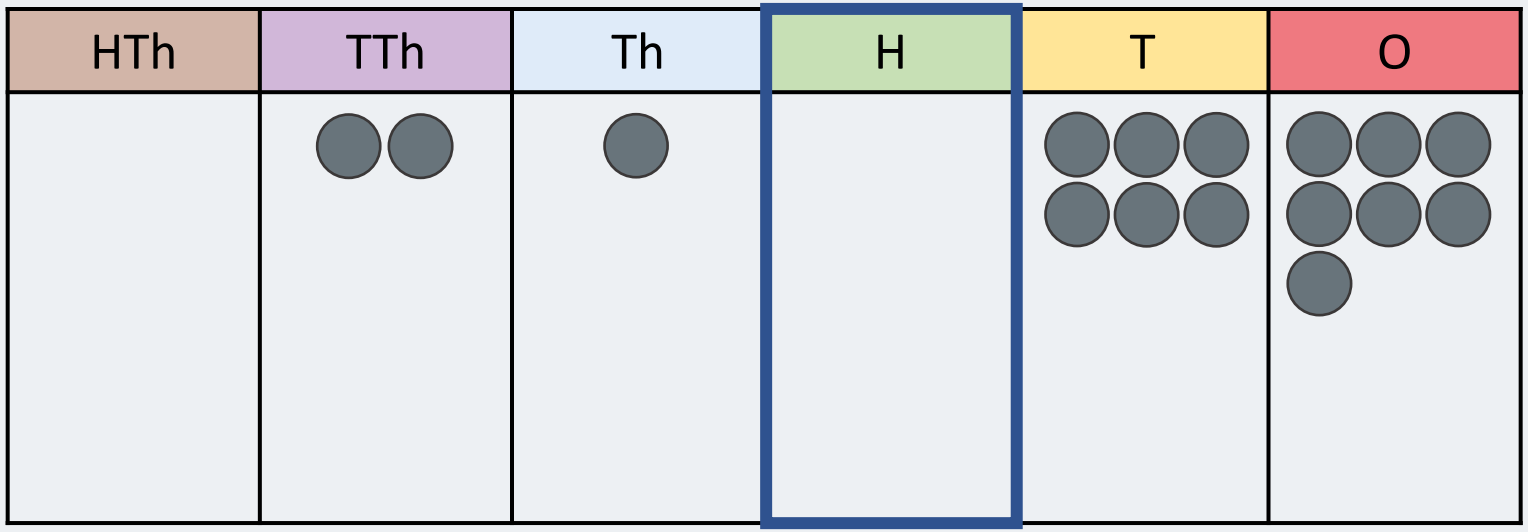
Let's Learn:



3,524 is equal to 3 thousands, 5 hundreds, 2 tens and 4 ones.

L-To be able to partition numbers to a million.

Let's Learn:



21,067 is equal to 2 ten-thousands, 1 thousand, 0 hundreds, 6 tens and 7 ones.

21,067 = 20,000 + 1,000 + 60 + 7

L-To be able to partition numbers to a million.

Let's Learn:

620,913

HTh	TTh	Th	H	T	O

What is the value of the first digit? 600,000

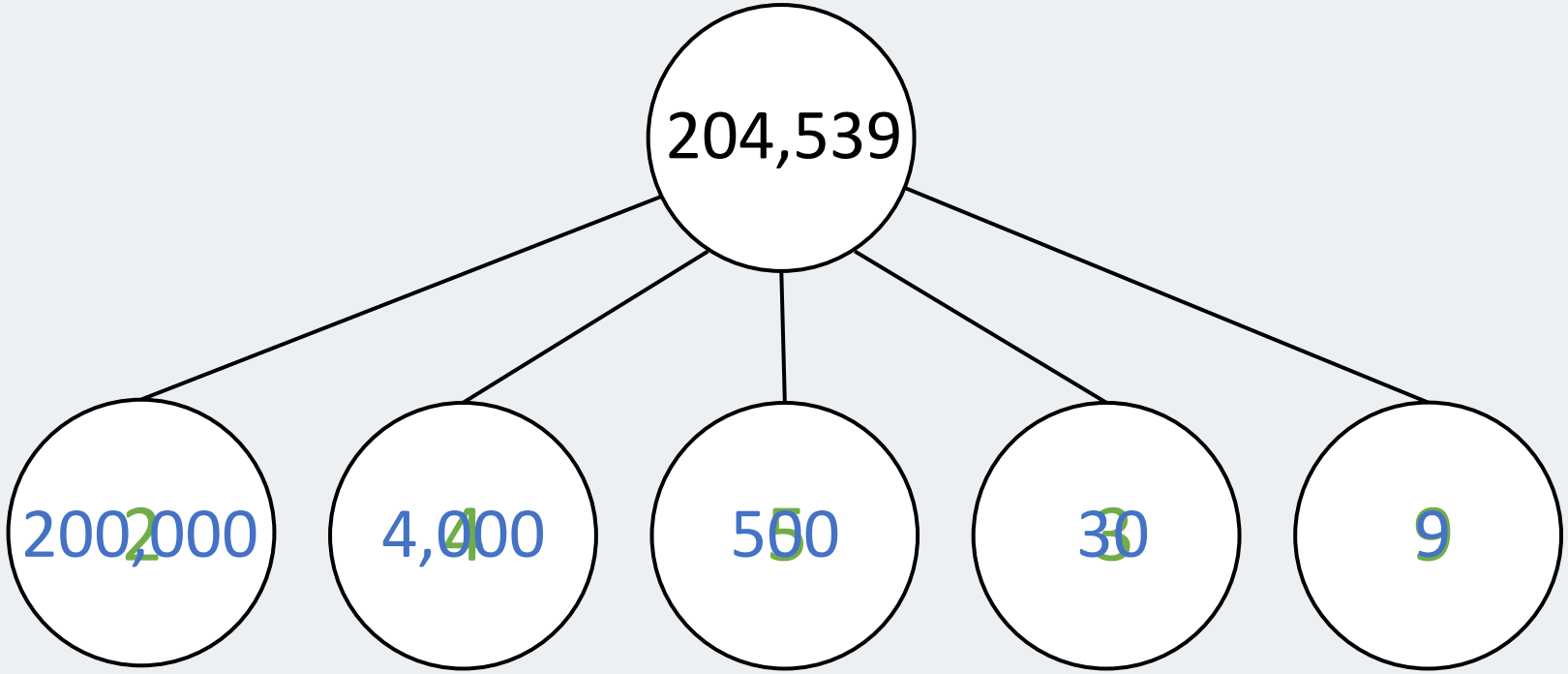
What is the value the digit 9? 900

What is the value of the third digit? 0

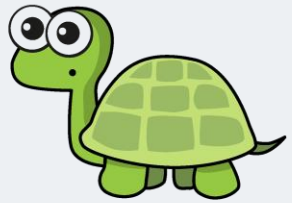
L-To be able to partition numbers to a million.

Let's Learn:

Complete the part-whole model.



Do you agree with Tiny?



No, Tiny has not considered the place value of each digit.

L-To be able to partition numbers to a million.

Let's Have a Go:

1

Partition the numbers into thousands, hundreds, tens and ones.

- 6,789 = _____ + _____ + _____ + _____
- 4,813 = _____ + _____ + _____ + _____

2 Complete the number sentences.

- _____ = 20,000 + 7,000 + 800 + 40 + 3
- 560,830 = _____ + 60,000 + _____ + 30

What number is being represented?

How can place value cards be used to help partition a number?

If you have 10 hundreds/thousands/ten-thousands, what can these be exchanged for?

L-To be able to partition numbers to a million.

Independent Practice:

1 Complete the number sentence to partition the number.

231,465 = 200,000 + ☐ + ☐ + ☐ + ☐ + ☐

2 Complete the number sentence to partition the number.

HTh	TTh	Th	H	T	O
●● ●	●● ●● ●		●●	●	●●

☐ + ☐ + ☐ + ☐ + ☐ = ☐

3 Partition each number into its parts.

The first one has been done for you.

a) 32,607 = 30,000 + 2,000 + 600 + 7

e) 769,688 = _____

4 Complete the number sentences.

a) 125,684 = 100,000 + 20,000 + 4,000 + ☐ + 84

b) 125,684 = 110,000 + ☐ + 600 + ☐

1	231,465 = 200,000 + 30,000 + 1,000 + 400 + 60 + 5
2	300,000 + 50,000 + 200 + 10 + 2 = 350,212

a) 32,607 = 30,000 + 2,000 + 600 + 7
b) 2,915 = 2,000 + 900 + 10 + 5
c) 30,316 = 30,000 + 300 + 10 + 6
d) 438,390 = 400,000 + 30,000 + 8,000 + 300 + 90
e) 769,688 = 700,000 + 60,000 + 9,000 + 600 + 80 + 8

a) 125,684 = 100,000 + 20,000 + 4,000 + 1,600 + 84
b) multiple possible answers, e.g.
125,684 = 115,000 + 10,000 + 600 + 84
c) multiple possible answers, e.g.
597,203 = 203 + 400,000 + 190,000 + 7,000

L-To be able to partition numbers to a million.

If you finish:

Esther is partitioning a number written in Roman numerals.

MMDXL = M + M + D + X + X + X + X

Is Esther correct?

Find some other ways of partitioning the number using Roman numerals.

Esther is correct.

---

multiple possible answers, e.g.

MM + CD + C + XL

M + D + D + D + XL

Arithmetic questions

ANSWERS	
Subtraction with Formal Written Methods	**Back to Basics**
1.) 1,331	**5.)** 1,443
2.) 20,795	**6.)** 16,494
3.) 1548.0	**7.)** 11,953
4.) 16.1	**8.)** 2,212

Year 5 | Autumn term | Block 1 – Place value | Step 9

T- Number line to 1,000,000

L-To be able to locate numbers on a number line.

Recall

1) Complete the number tracks.

100	200	300	400	500	600	700	800

3,000	4,000	5,000	6,000	7,000	8,000	9,000	10,000

44,000	44,200	44,400	44,600	44,800	45,000	45,200	45,400

2) 100,000 ÷ 10 = 10,000

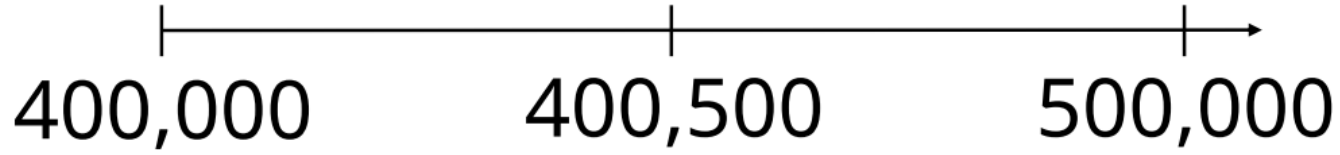
3) 10,000 ÷ 2 = 5,000

4) 10,000 ÷ 4 = 2,500

L-To be able to locate numbers on a number line.

Hook:

The midpoint between 400,000 and 500,000 is 400,500



Do you agree with this statement? Explain your reason.

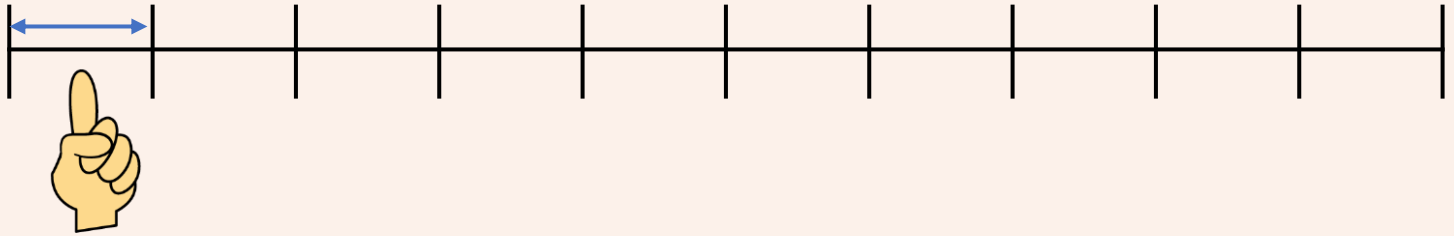
What are the values at the start and the end of the number line?

Mr Kenny says it is important to work out how many intervals there are. How does this help?

Mr Smith says that he thinks the midway point is 450,000. Is he correct? Why/why not?

L-To be able to locate numbers on a number line.

Let's Learn:

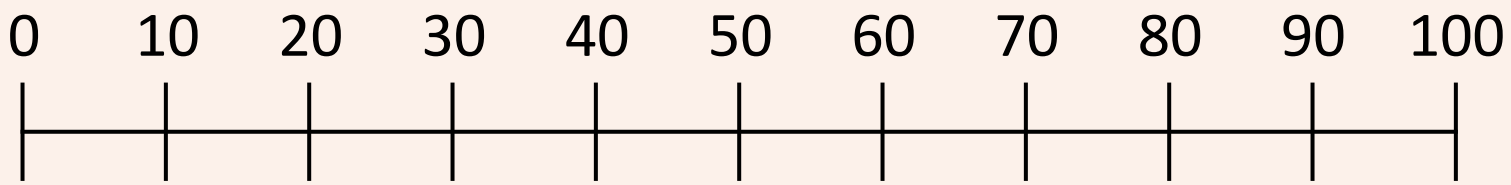


What is an interval?

There are 10 intervals on this number line.

L-To be able to locate numbers on a number line.

Let's Learn:



The difference in value between the start and end point is 100

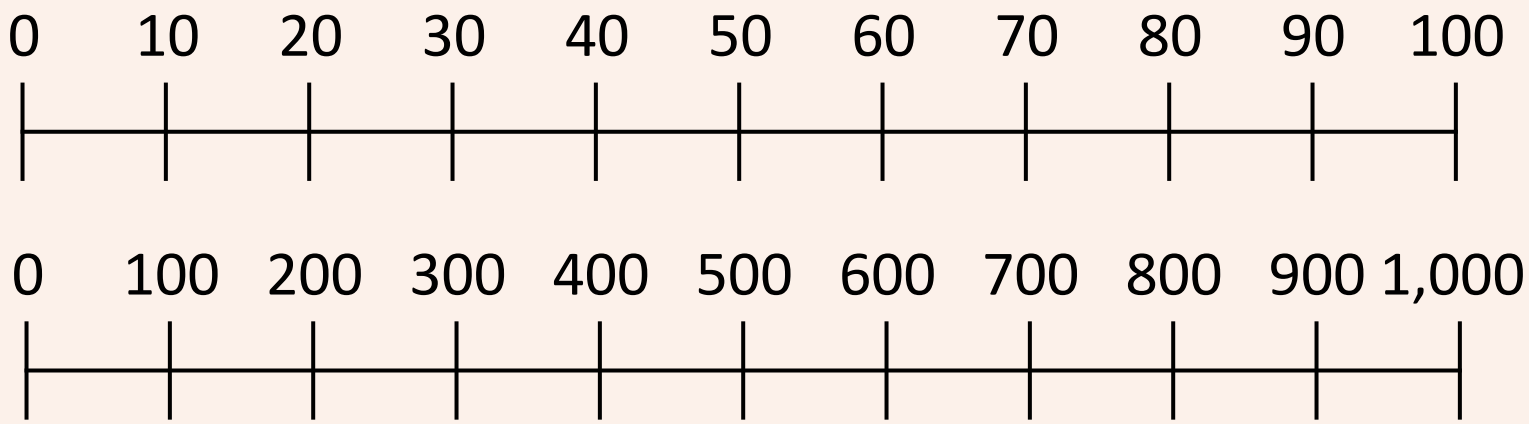
100 ÷ 10 = 10

There are 10 intervals.

The number line is counting up in 10s

L-To be able to locate numbers on a number line.

Let's Learn:



The difference in value between the start and end point is 1,000

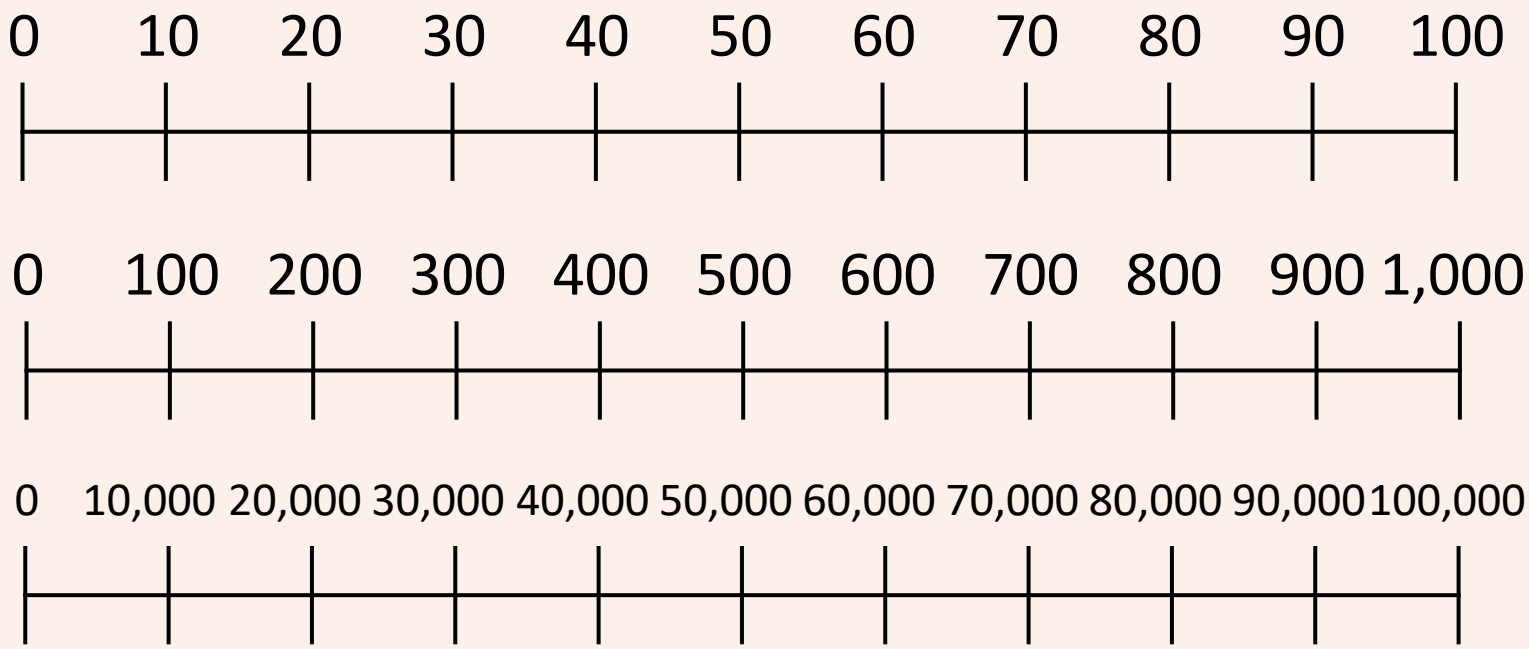
There are 10 intervals.

$1{,}000 \div 10 = 100$

The number line is counting up in 100s

L-To be able to locate numbers on a number line.

Let's Learn:



The difference in value between the start and end point is 100,000

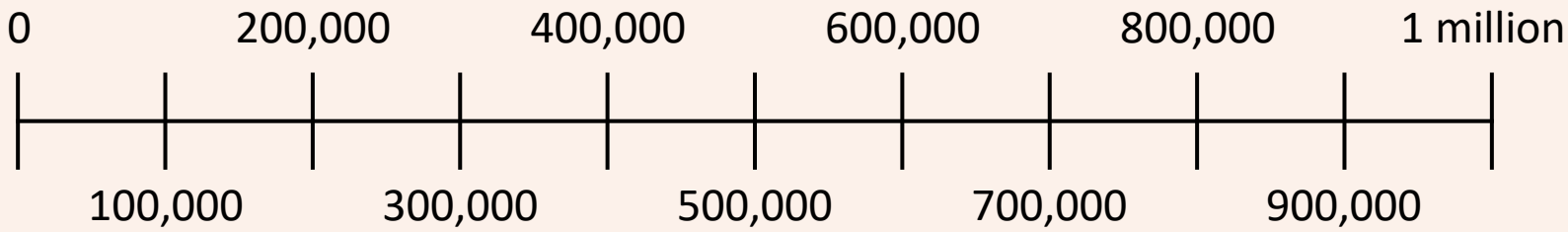
There are 10 intervals.

100,000 ÷ 10 = 10,000

The number line is counting up in 10,000s

L-To be able to locate numbers on a number line.

Let's Learn:



The difference in value between the start and end point is 1,000,000

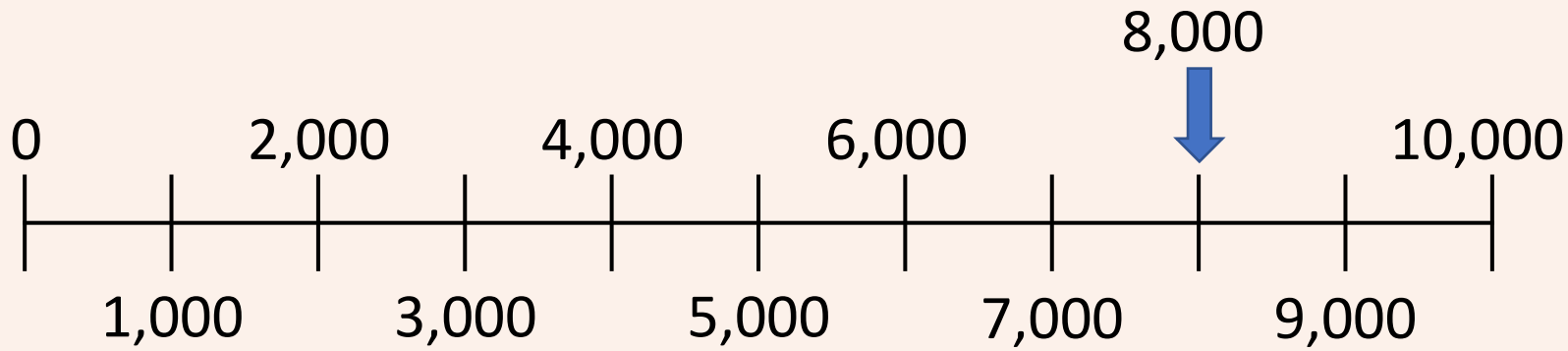
1,000,000 ÷ 10 = 100,000

There are 10 intervals.

The number line is counting up in 100,000s

L-To be able to locate numbers on a number line.

Let's Learn: What number is the arrow pointing to?



The difference in value between the start and end point is 10,000

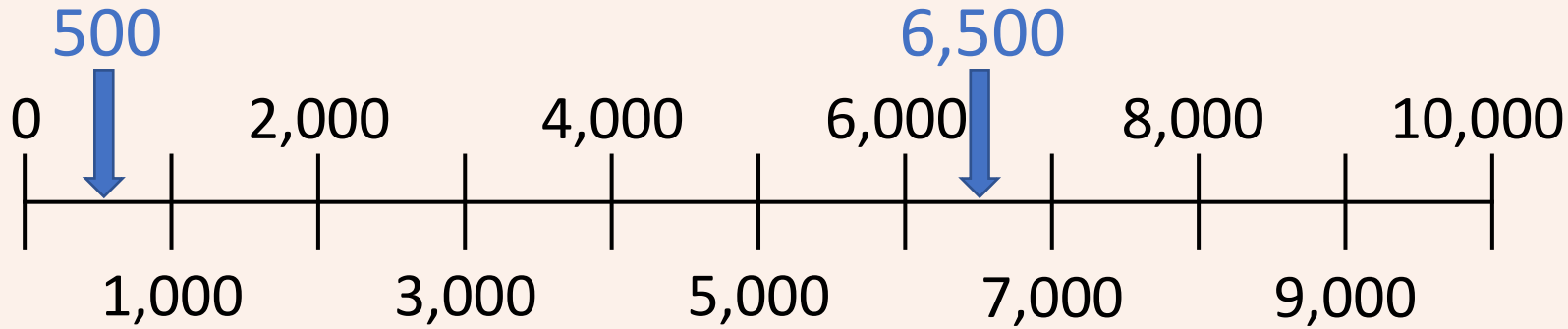
There are 10 intervals.

10,000 ÷ 10 = 1,000

The number line is counting up in 1,000s

L-To be able to locate numbers on a number line.

Let's Learn: What number is the arrow pointing to?



The midpoint between 0 and 1,000 is 500

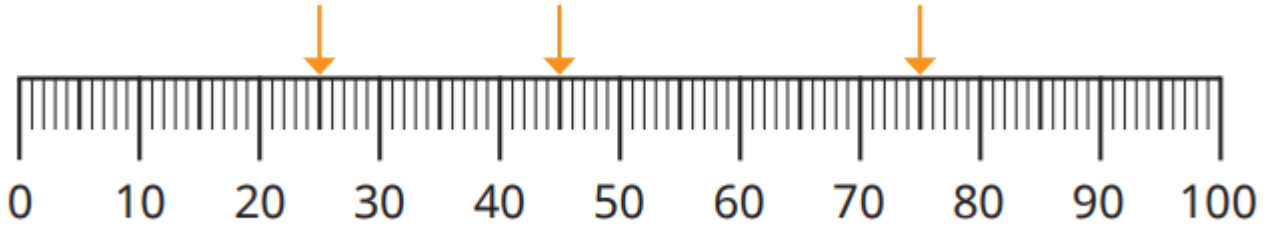
$1{,}000 \div 2 = 500$

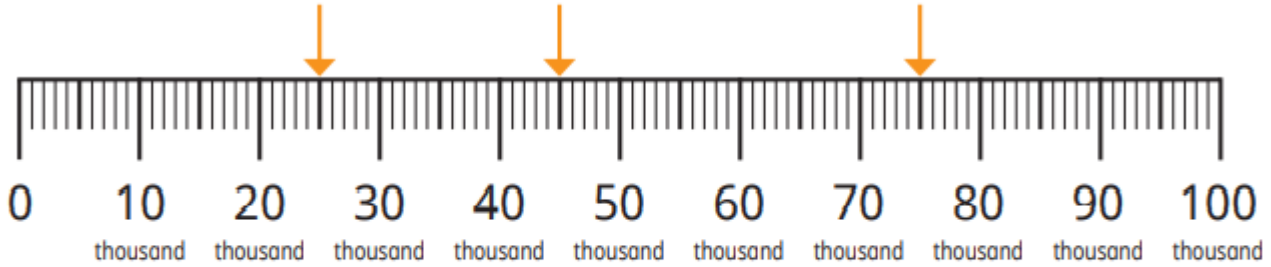
The midpoint between 6,000 and 7,000 is 6,500

L-To be able to locate numbers on a number line.

Let's Have a Go:

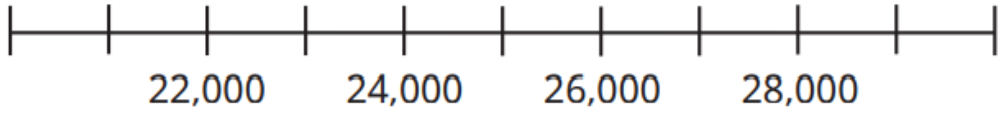
What numbers are the arrows pointing to?

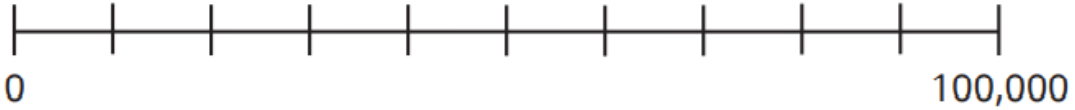




What is the same about the number lines? What is different?

Label the start and end points on the number line.





Draw arrows on the number line to show:

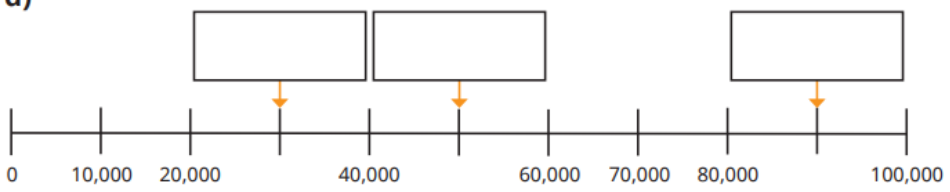
- the exact position of 60,000
- the approximate position of 35,000
- the approximate position of 82,369

L-To be able to locate numbers on a number line.

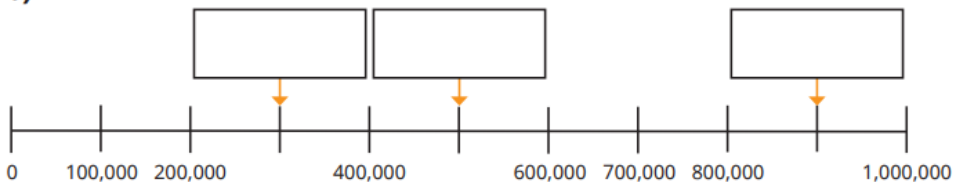
Independent Practice:

1 What numbers are the arrows pointing to?

a)

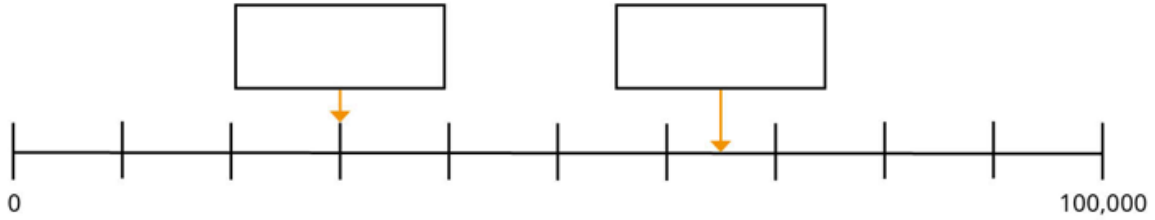


b)

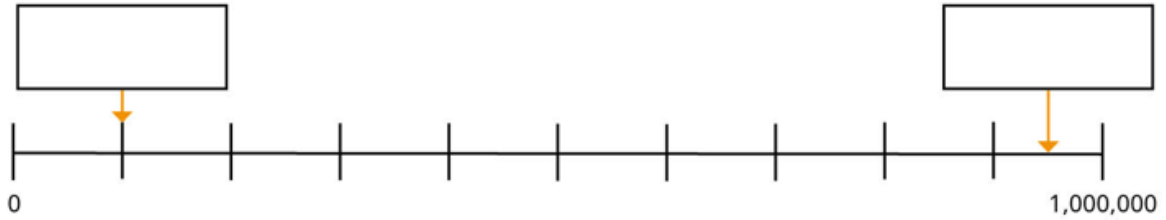


2 What numbers are the arrows pointing to?

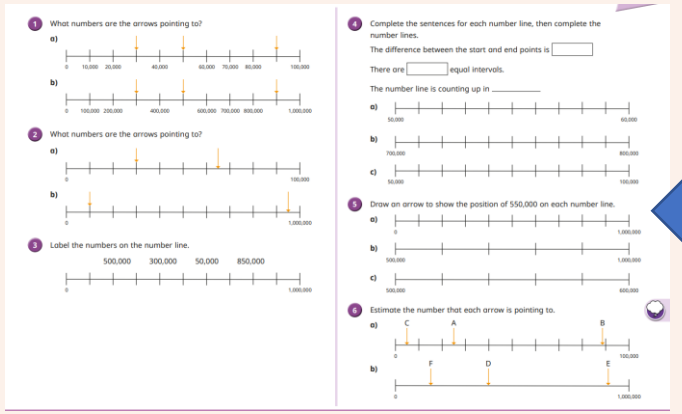
a)



b)



1	a) 30,000 50,000 90,000 b) 300,000 500,000 900,000
2	a) 30,000 65,000 b) 100,000 950,000



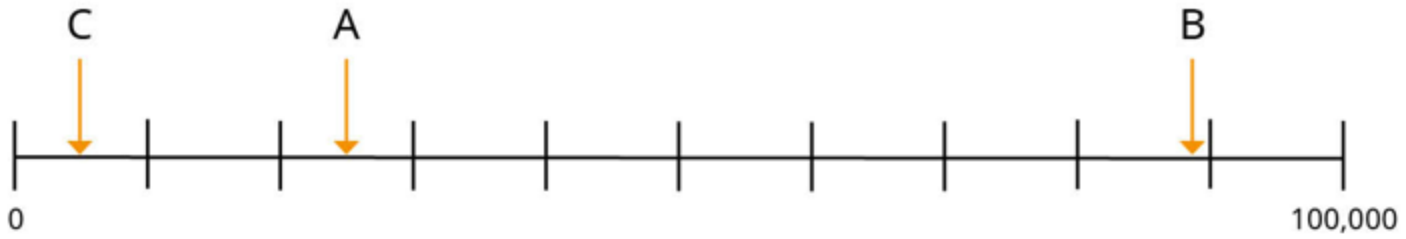
See print out for extra questions

L-To be able to locate numbers on a number line.

If you finish:

Estimate the number that each arrow is pointing to.

a)



A = ☐ B = ☐ C = ☐

b)

D = ☐ E = ☐ F = ☐

multiple possible answers, e.g.

a) A = 35,000 B = 89,000 C = 5,000

b) D = 400,000 E = 900,000 F = 150,000

Arithmetic questions

ANSWERS	
Multiplication Written Methods	**Back to Basics**
1.) 678	**5.)** 114
2.) 4,335	**6.)** 1,635
3.) 11,820	**7.)** 9,417
4.) 19,425	**8.)** 4,345

Year 5 | Autumn term | Block 1 – Place value | Step 10

T- Compare and order numbers to 100,000

L-To be able to compare and order numbers using place value

Recall

1) $300 + 4 + 10{,}000 =$ 10,304

2) C = 100
   I = 1
   X = 10
   V = 5

3) What does ascending mean? Increasing in size

4) What does descending mean? Decreasing in size

L-To be able to compare numbers using place value.

Hook

The class is playing a number game.

's card

7	8	1	6	2	0	9	3	5	4

's card

0	7	1	2	3	9	8	4	5	6

Each student draws a digit card from his or her stack and decides its place value. These cannot be changed. Students continue to draw cards until each player has a 6-digit number. The player with the greater number wins.

Key Questions:

What is the easiest way to compare the numbers?

Mr Kenny says that it is easiest to compare numbers by looking at the ones. Is this true?

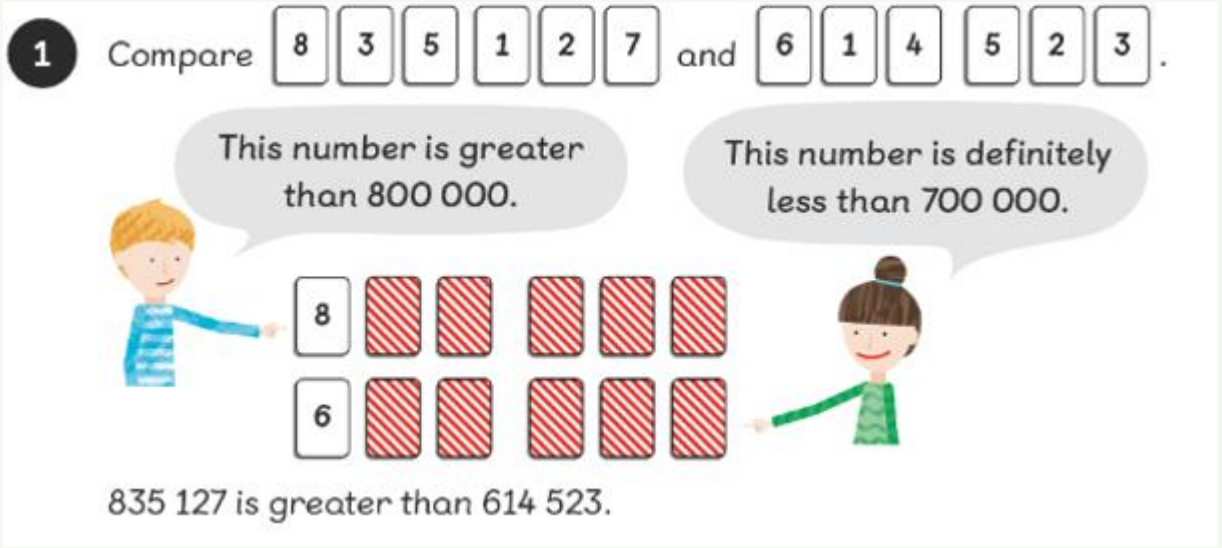
Can you come up with a rule that helps you compare numbers?

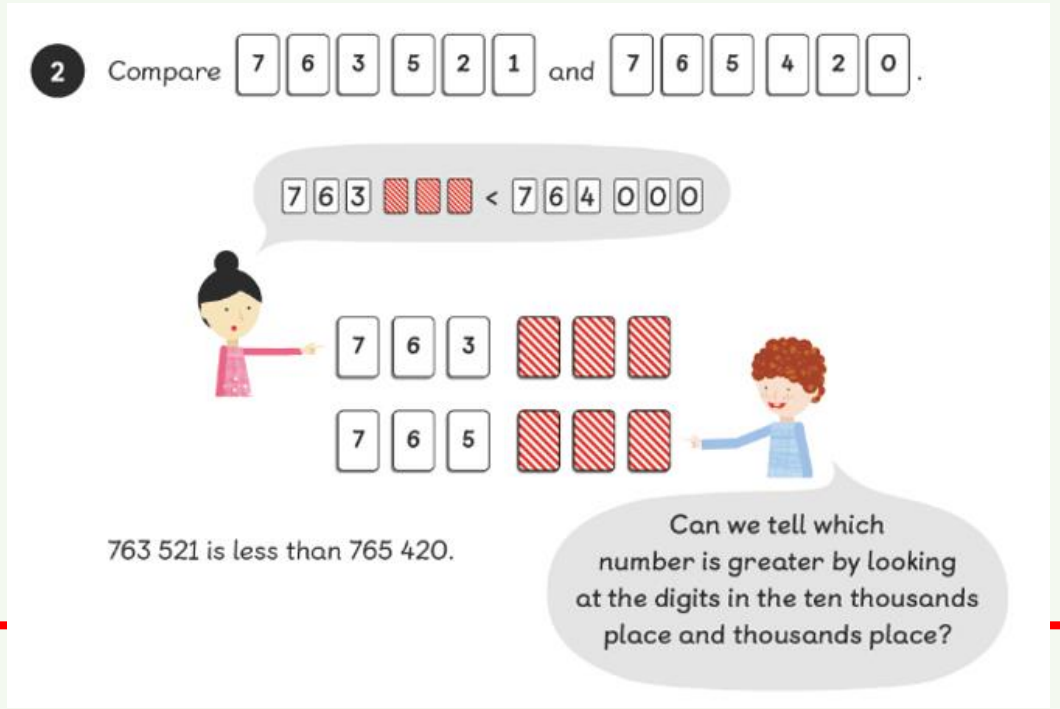
What does greater than mean?

What does less than mean?

To be able to compare numbers using place value.

Let's Learn:





Key Questions:

In order to compare numbers, what do we need to know?

Why do the children compare the first digit only?

Will this work every time?

What do we need to do to if the columns have the same digits?

To be able to compare numbers using place value.

Let's Learn:

Dexter's number

24,013

TTh	Th	H	T	O
2	4	0	1	3

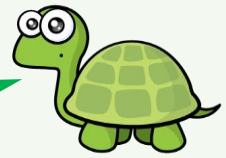
24,013 < 40,101

Dora's number

40,101

TTh	Th	H	T	O
4	0	1	0	1

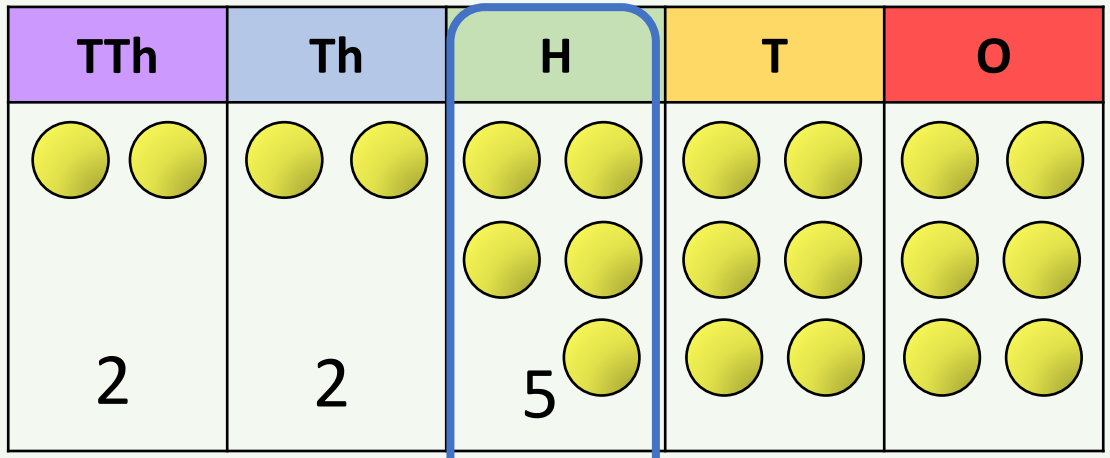
Dexter's number is greater! He has used 10 counters whereas Dora has only used 6



To be able to compare numbers using place value.

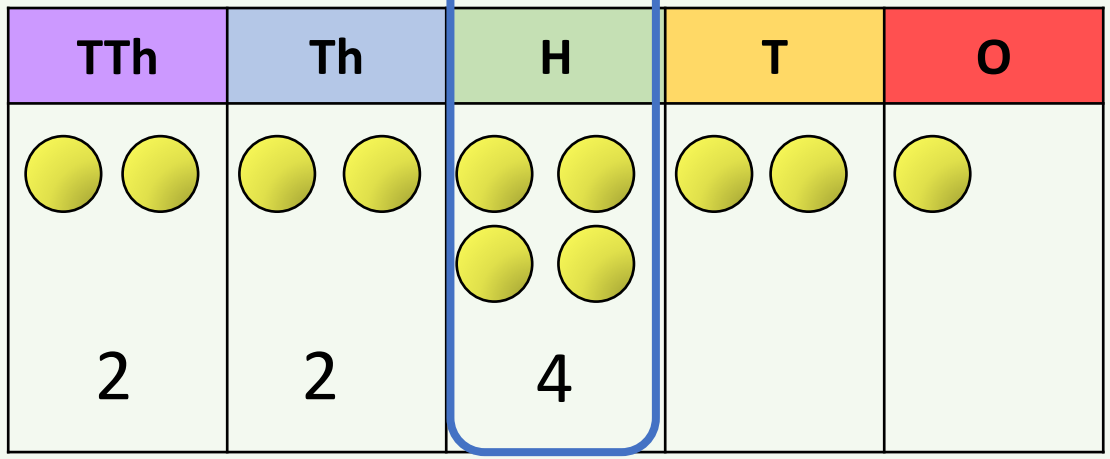
Let's Learn:

A



A > B

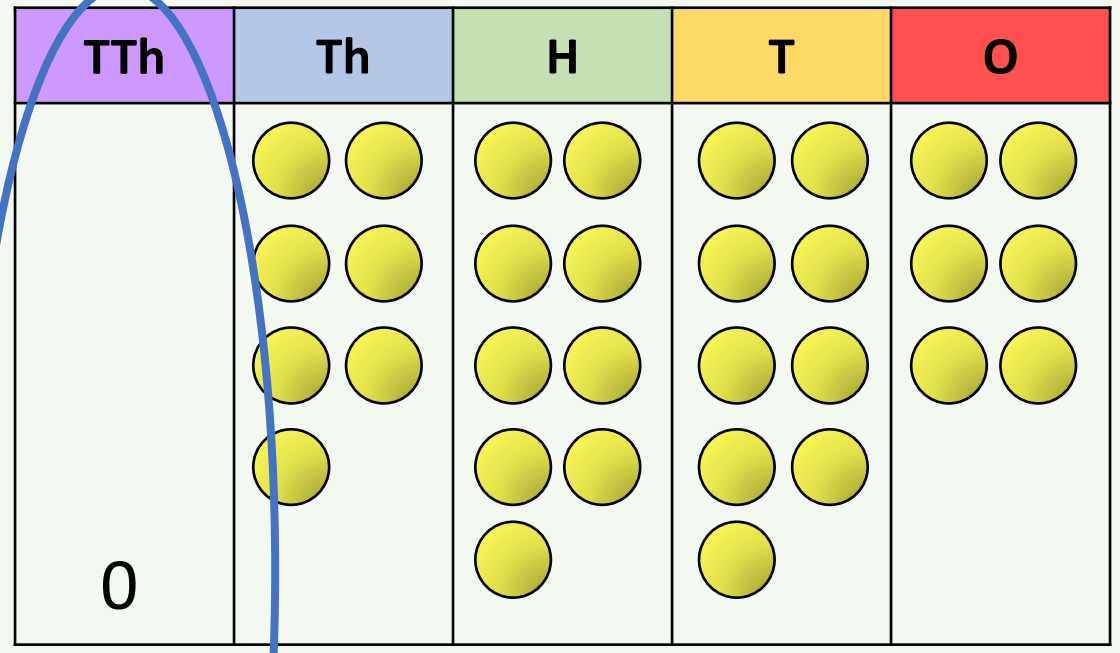
B



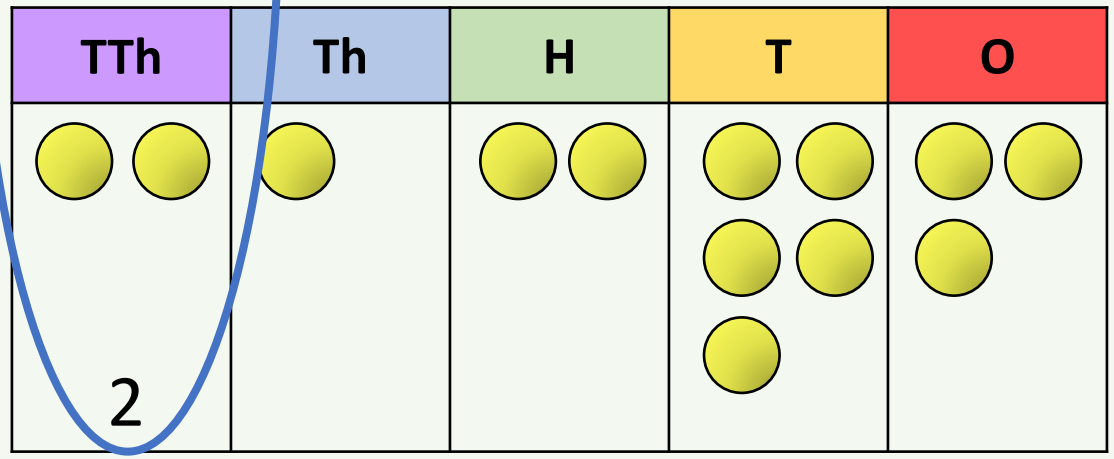
To be able to compare numbers using place value.

Let's Learn:

A) 7,996



B) 21,253



A < B

To be able to compare numbers using place value.

Let's Learn:

Order the numbers, starting with the smallest.

99 _____ 513 _____ 5,109 _____ 5,122 _____ 11,022 _____

To be able to compare numbers using place value.

Let's Have a go:

1 Who made a greater number?

☐ is greater than ☐.
☐ is less than ☐.

2 Who made a smaller number?

☐ is greater than ☐.
☐ is less than ☐.

Key Questions:

Which number is already greater than 800 000?

Is a 6 digit number always greater than a five digit number?

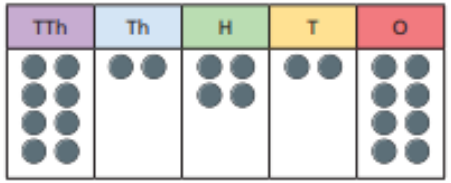
3 Some ink spilt on the sheets of paper. All the numbers are 6-digit numbers. Is it possible to tell which number is greater?

To be able to compare numbers using place value.

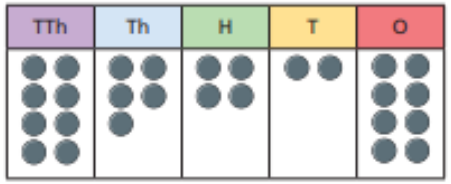
Independent Practice:

1 Rosie and Jack have each made a number.

Rosie's number



Jack's number



a) Who has made the greater number? How do you know?

b) Draw counters on a place value chart to show a number that is greater than both Rosie's and Jack's.

2 Use 5 counters to make four different numbers on a place value cha

a) Write your numbers.

b) Write your numbers in order from smallest to greatest.

3 Circle the greater number in each pair.

a)	10,000	1,000	**d)**	5,400	4,500
b)	2,300	3,200	**e)**	56,000	6,500
c)	34,975	9,345	**f)**	9,999	99,999

4 Write the numbers in order starting with the smallest.

a)	9,000	908	972	99	90,000
b)	700	72	576	907	27

Question	Answer
1	a) Jack They have the same number of ten thousands, but Jack has more thousands. b) Any number that is greater than 85,428
2	a) four numbers each with digit total of 5 b) numbers from part a) written in order from smallest to greatest
3	a) 10,000 b) 3,200 c) 34,975 d) 5,400 e) 56,000 f) 99,999
4	a) 99 908 972 9,000 90,000 b) 27 72 576 700 907

To be able to compare numbers using place value.

If you finish:

Place the digits cards 0 to 9 face down and select five of them.

Make the greatest number possible and the smallest number possible.

How do you know which is the greatest or smallest?

Dependent on numbers chosen.
e.g. 4, 9, 1, 3, 2

Smallest: 12,349
Greatest: 94,321

I know this is the greatest number because the digit cards with the larger numbers are in the place value columns with the greater values.

Arithmetic questions

ANSWERS	
Multiplication Written Methods	**Back to Basics**
1.) 6,144	**5.)** 744
2.) 19,788	**6.)** 26,180
3.) 39,582	**7.)** 2,065
4.) 6,462	**8.)** 981

T- Compare and order numbers to 1,000,000

L-To be able to compare numbers using place value.

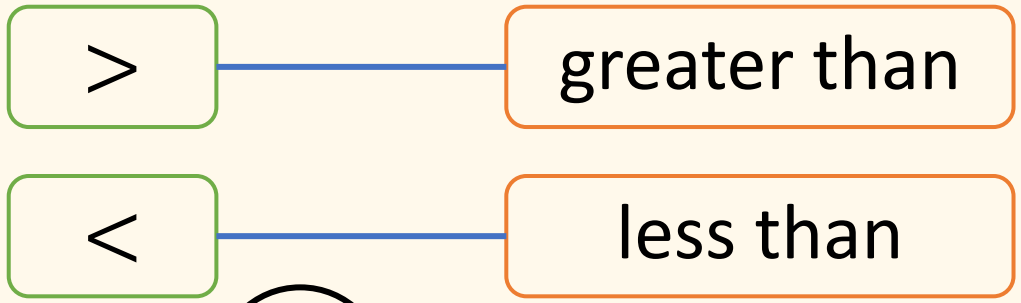
Recall

1) What digit is in the ten-thousands place in 703,562?

0

2) 6,834 6,934 7,034 7,134

3) Match the symbols to the correct meanings.



greater than

<

less than

4) 1,003 > 978

To be able to compare numbers using place value.

Hook

Can you use all 16 digit cards to make three numbers greater than 10 000 but less than 1 000 000?

Arrange them from the smallest to the greatest.

Key Questions:

Mr Kenny says the best way to solve this problem is to make sure the numbers are greater than 100 000. Is this possible?

What are the three largest numbers that are possible with the given digits?

What are the three smallest numbers that are possible with the given digits?

To be able to compare numbers using place value.

Let's Learn:

Key Questions:

What rule can you use to compare numbers?

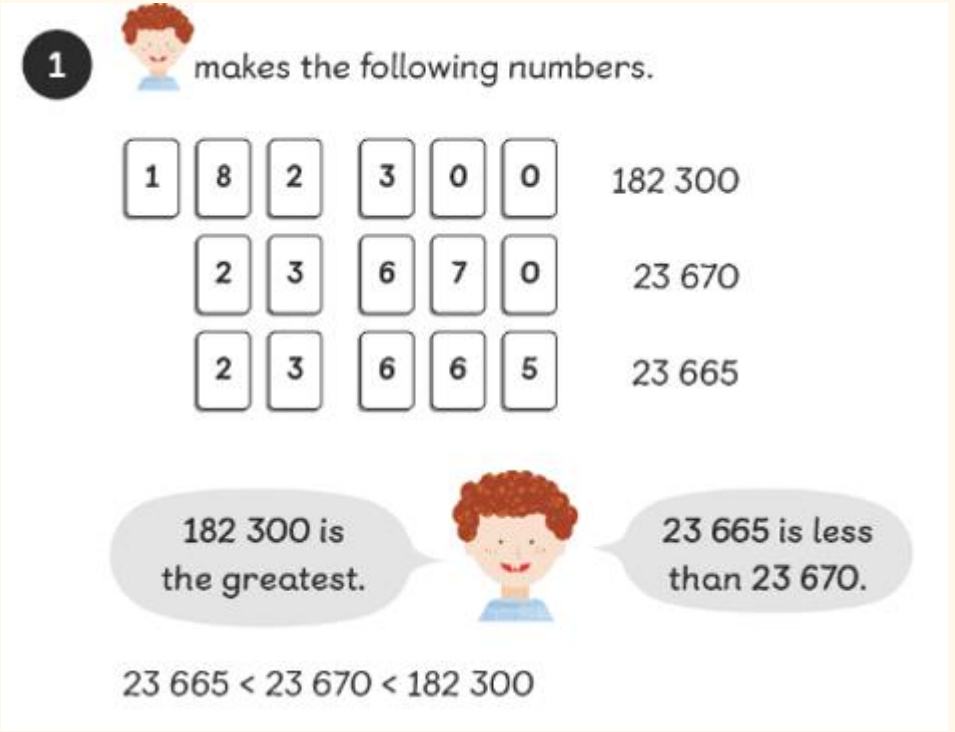
What symbol is used to show greater than?

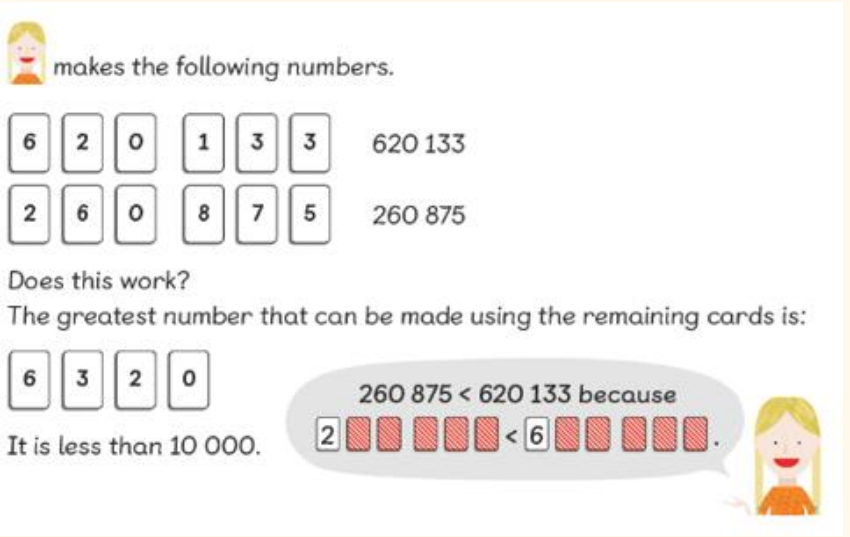
What symbol is used to represent less than?

What rule can you use to help remember the symbol's direction?

What does the word ascending mean?

What does the word descending mean?





To be able to compare numbers using place value.

Let's Learn:

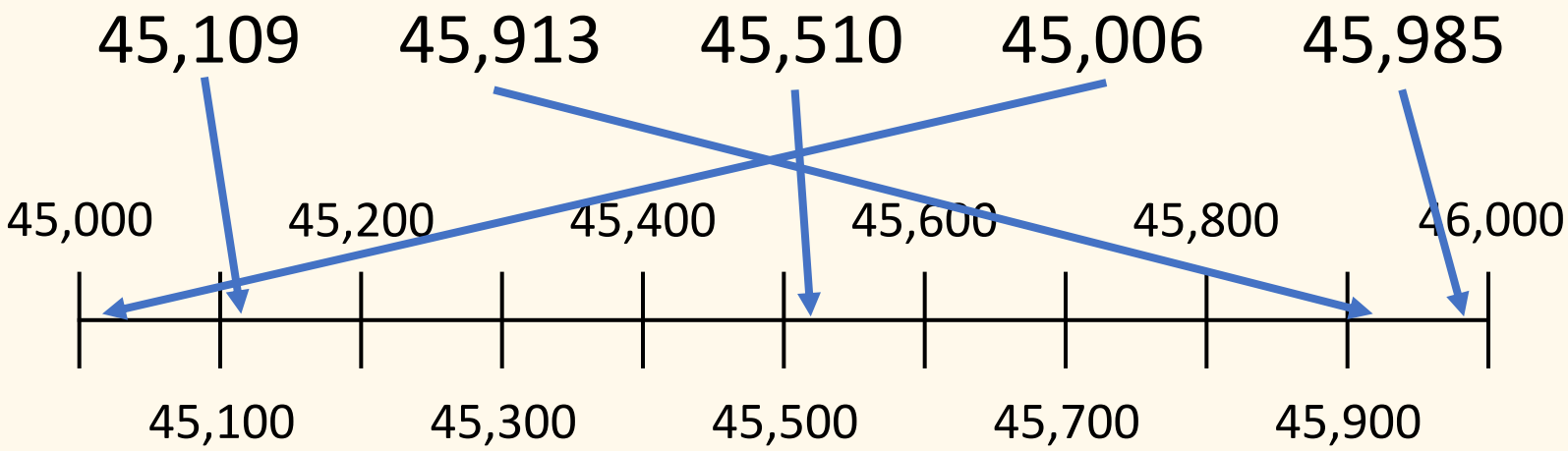
Complete the number sentences using the correct inequality sign.

One hundred thousand and one 100,001	>	64,032
07,489	<	74,890
477,380	>	477,308

To be able to compare numbers using place value.

Let's Learn:

Use the number line to help write the numbers in descending order.



The difference in value between the start and end point is 1,000

1,000 ÷ 10 = 100

45,985 _____ 45,913 _____ 45,510 _____ 45,109 _____ 45,006 _____

There are 10 intervals.

The number line is counting up in 100s

To be able to compare numbers using place value.

Let's Learn:

Order the numbers, starting with the greatest.

~~45,109~~ ~~4,923~~ ~~45,910~~ ~~49,006~~ ~~45,915~~

49,006 45,915 45,910 45,109 4,923

Key Questions:
What is the most efficient strategy you can use?

To be able to compare numbers using place value.

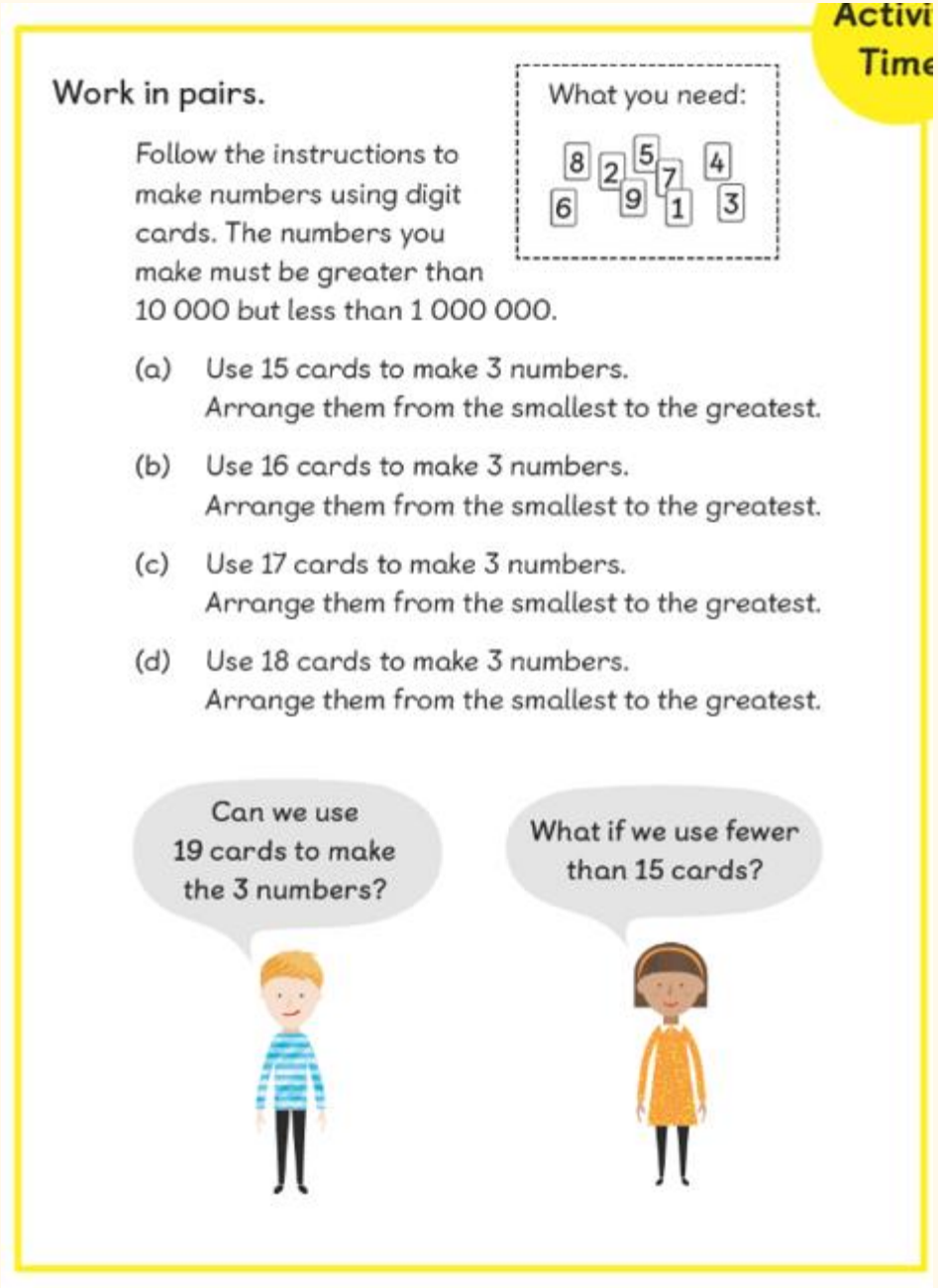
Maths Activity:

Key Questions:

Can we use 19 cards to make three numbers?

What if we used fewer than 15 cards?

What symbol can you use to compare?



Activi
Time

Work in pairs.

What you need:

Follow the instructions to make numbers using digit cards. The numbers you make must be greater than 10 000 but less than 1 000 000.

(a) Use 15 cards to make 3 numbers.
Arrange them from the smallest to the greatest.

(b) Use 16 cards to make 3 numbers.
Arrange them from the smallest to the greatest.

(c) Use 17 cards to make 3 numbers.
Arrange them from the smallest to the greatest.

(d) Use 18 cards to make 3 numbers.
Arrange them from the smallest to the greatest.

Can we use 19 cards to make the 3 numbers?

What if we use fewer than 15 cards?

To be able to compare numbers using place value.

If you finish:

Use the digit cards to make three different 5-digit numbers that match the clues.

0	1	2	3	4
5	6	7	8	9

- The digit in the ones column and the digit in the hundreds column have a difference of 2
- The digit in the hundreds column and the digit in the ten-thousands column have a difference of 2
- The sum of all the digits in the number is 19

Write your numbers in ascending order.

multiple possible answers, e.g.

18,325

47,260

56,341

Arithmetic questions

ANSWERS	
Multiplication Written Methods	**Back to Basics**
1.) 33,348	**5.)** 2,881
2.) 17,592	**6.)** 30,779
3.) 46,265	**7.)** 11,396
4.) 24,704	**8.)** 4,736

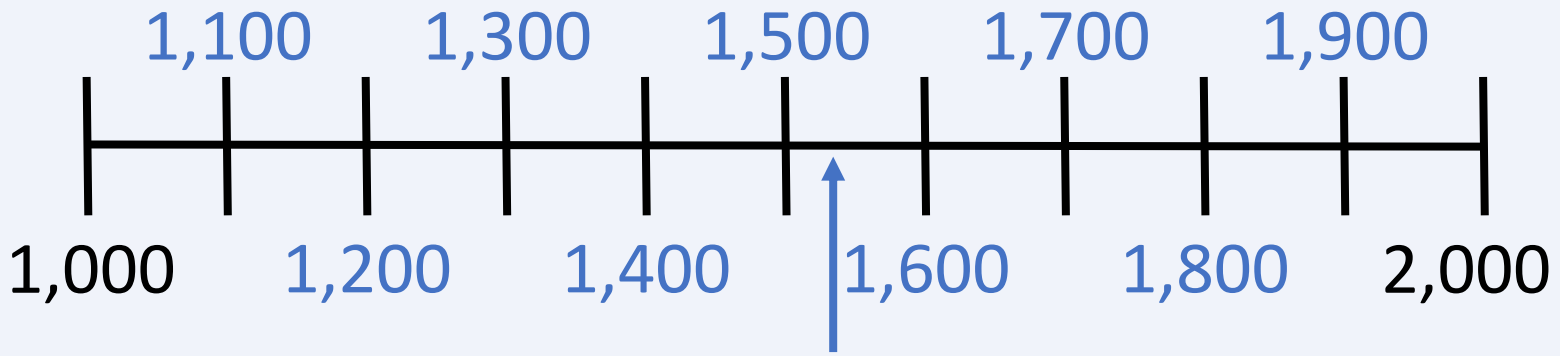
Year 5 | Autumn term | Block 1 – Place value | Step 12

T- Round to the nearest 10, 100 or 1,000

L-To round to the nearest 10, 100 or 1,000

Recall

1) Label the number line.



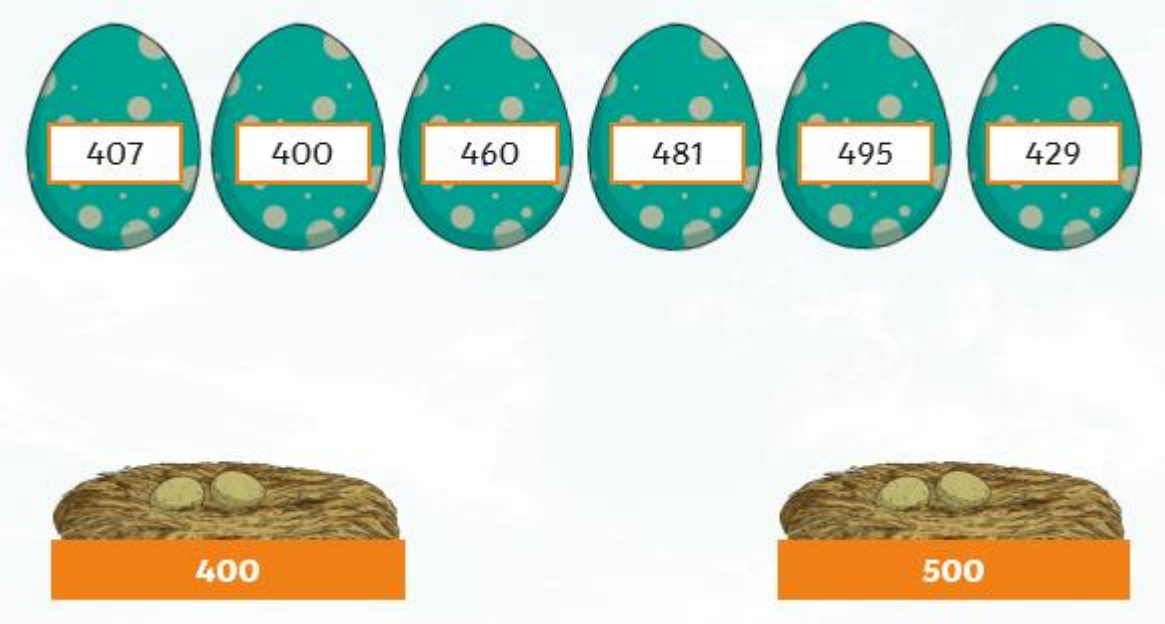
2) Estimate the position of 1,522 on the number line.

3) 880 890 900 910

4) 4,000 4,100 4,200 4,300

L- To Round to the nearest 10, 100 or 1,000.

Hook



How can you sort the eggs?

Key Questions:

What do the numbers have in common?

Could you place the numbers on a number line? How does that help?

My friend says that he would put 495 in the 500 nest as 495 is closest to 500. What does he mean by that?

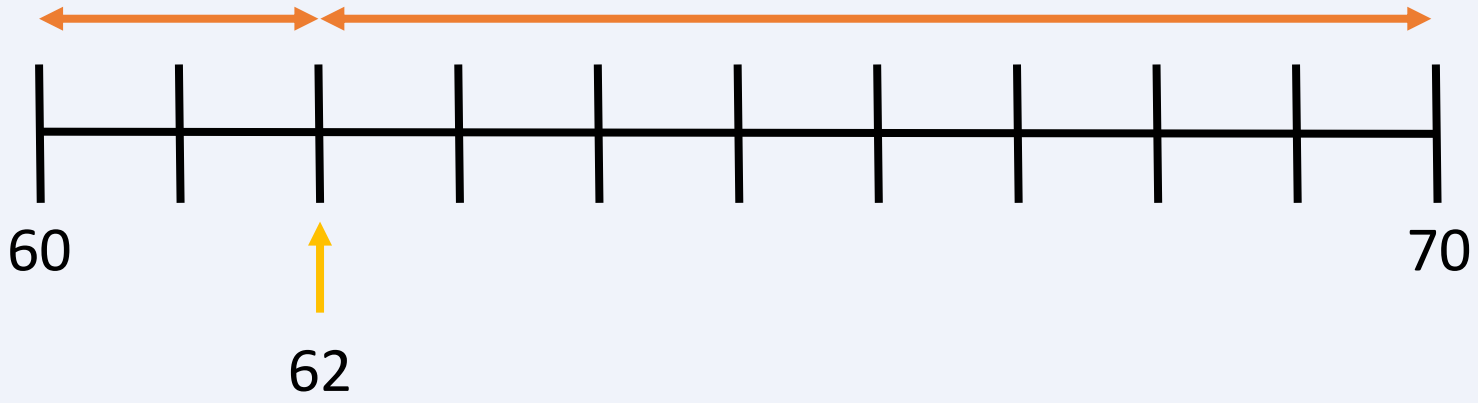
What is this process called?

When is [redacted] numbers useful?

How else could you sort the eggs?

L-To round to the nearest 10, 100 or 1,000

Let's Learn: Round 62 to the nearest 10



The previous multiple of 10 is 60

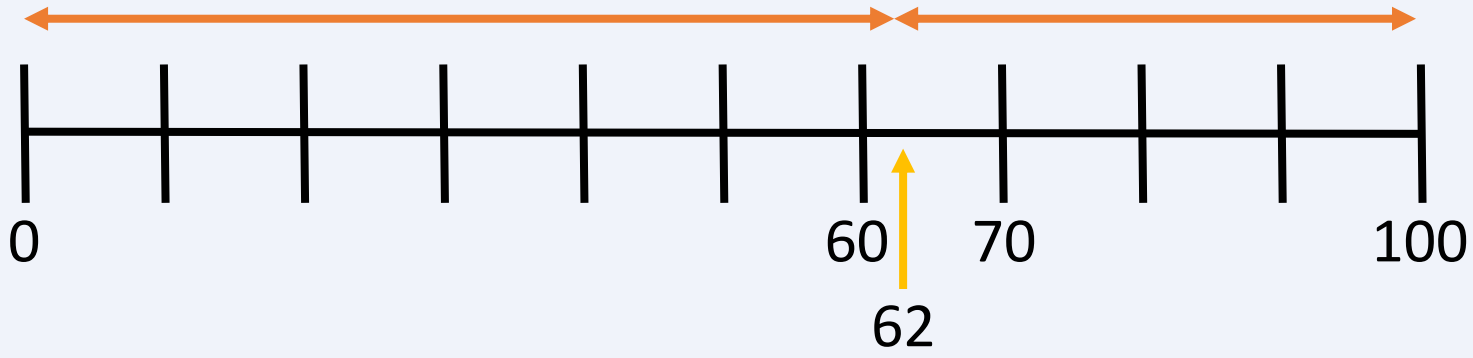
The next multiple of 10 is 70

62 is closer to 60 than 70

62 rounded to the nearest 10 is 60

L-To round to the nearest 10, 100 or 1,000

Let's Learn: Round 62 to the nearest 100



The previous multiple of 100 is 0

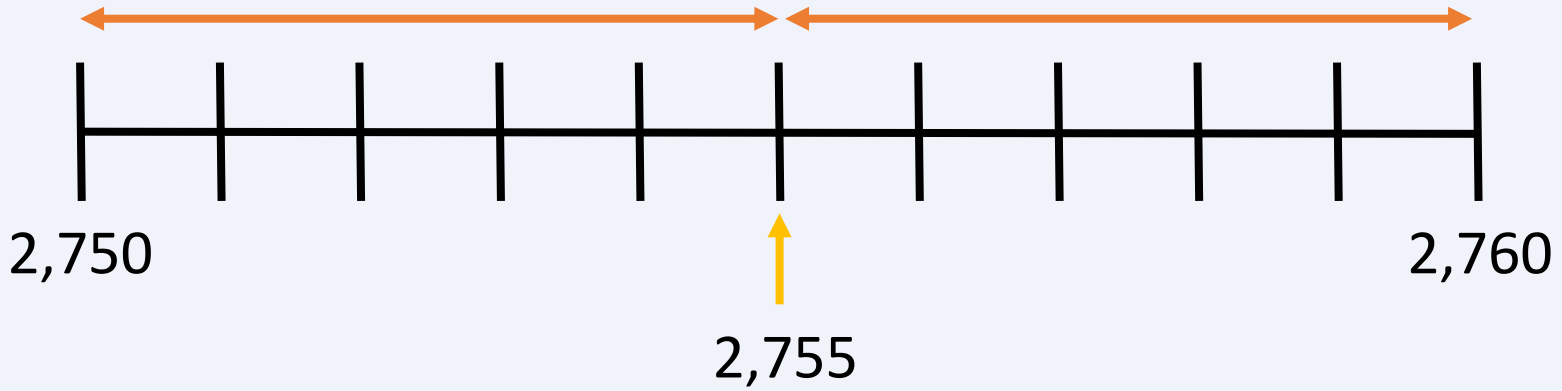
The next multiple of 100 is 100

62 is closer to 100 than 0

62 rounded to the nearest 100 is 100

L-To round to the nearest 10, 100 or 1,000

Let's Learn: Round 2,755 to the nearest 10 2,760



The previous multiple of 10 is 2,750

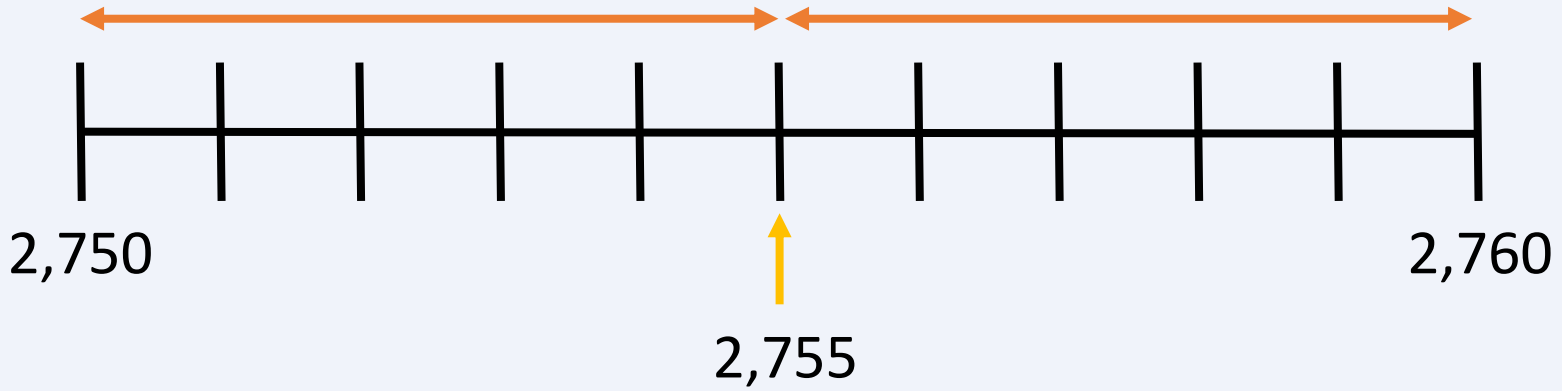
The next multiple of 10 is 2,760

2,755 rounded to the nearest 10 is 2,760

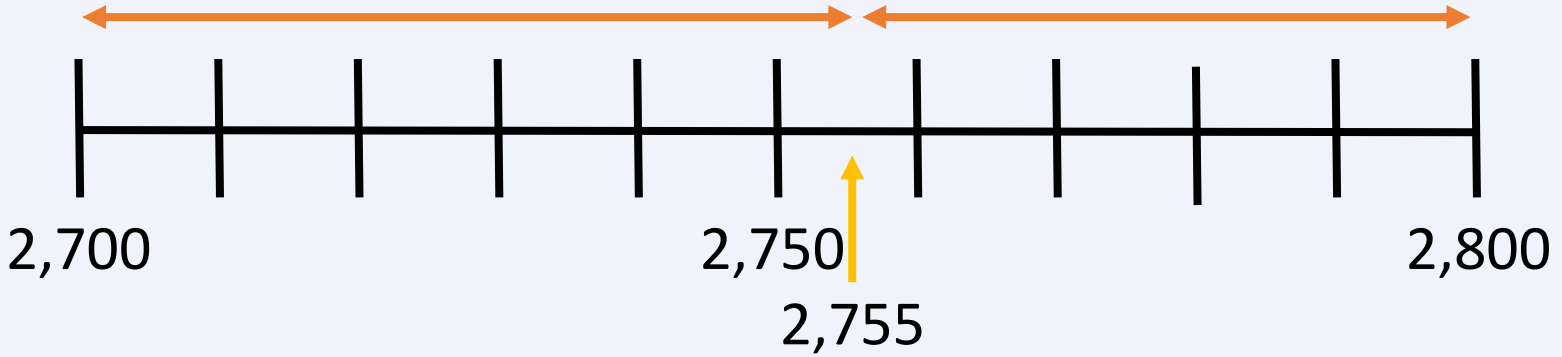
L-To round to the nearest 10, 100 or 1,000

Let's Learn:

Round 2,755 to the nearest 10 2,760



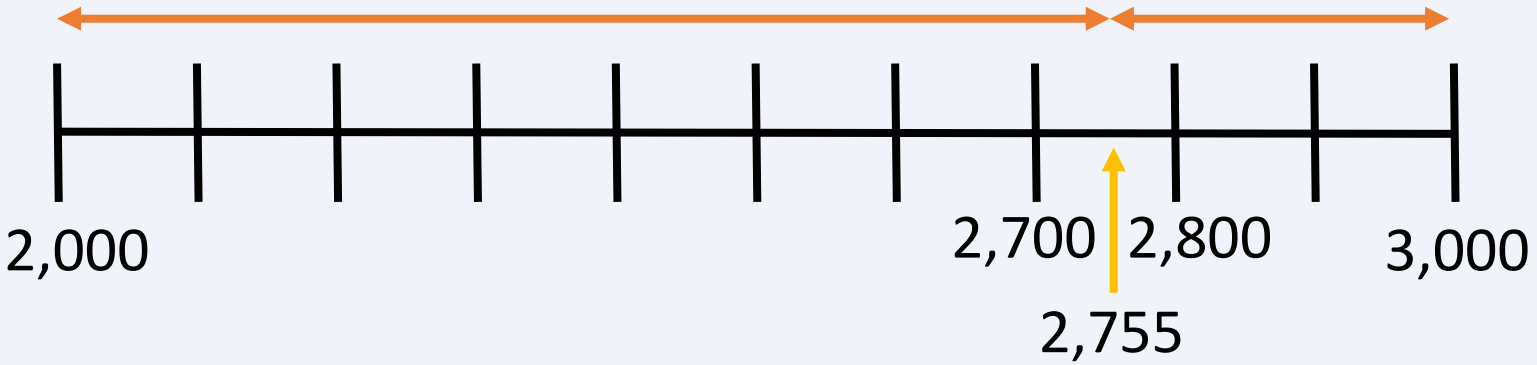
Round 2,755 to the nearest 100 2,800



L-To round to the nearest 10, 100 or 1,000

Let's Learn:

Round 2,755 to the nearest 1,000 3,000



The previous multiple of 1,000 is 2,000

The next multiple of 1,000 is 3,000

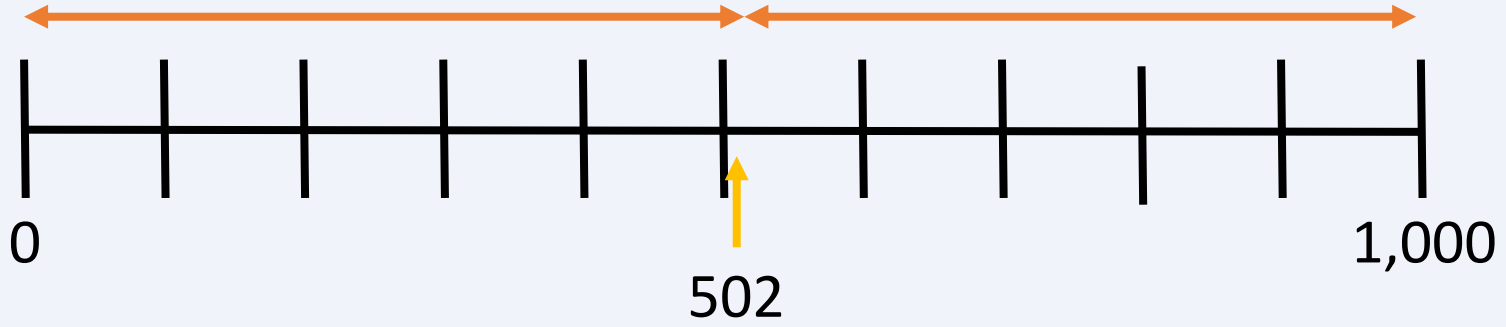
2,755 is closer to 3,000 than 2,000

2,755 rounded to the nearest 1,000 is 3,000

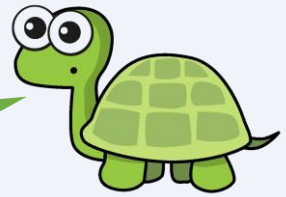
L-To round to the nearest 10, 100 or 1,000

Let's Learn:

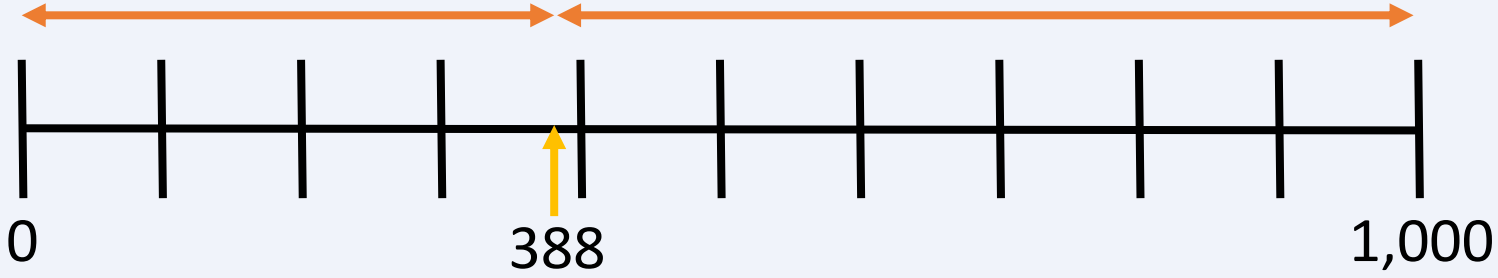
Round 502 to the nearest 1,000 1,000



You cannot round a 3-digit number to the nearest thousand.

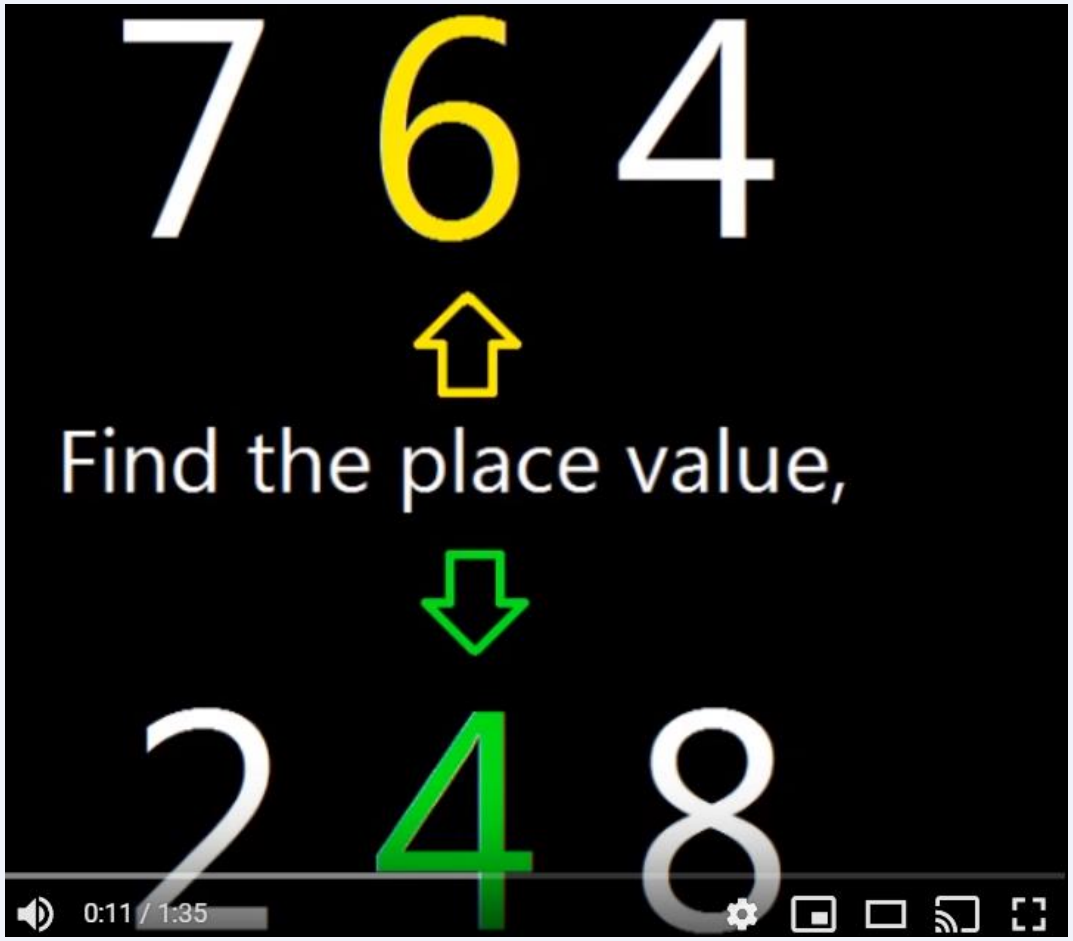


Round 388 to the nearest 1,000 0



L- To Round any number to the nearest 10, 100 or 1,000.

Let's Learn:



https://www.youtube.com/watch?v=3afU6JQG15I

Key Questions:

Which place value column do we need to look at when we round to the nearest 100?

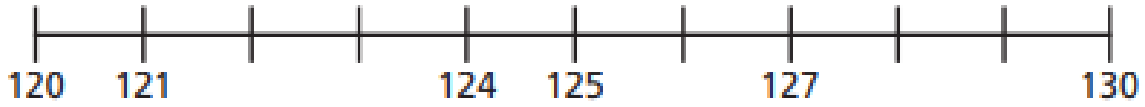
My friend says that it is always best to round to the nearest 10. Do you agree?

Can you explain why?

Do we get the same answer when rounding a number to the nearest 10 and 100?

L- To Round to the nearest 10, 100 or 1,000.

Let's have a go:



a) Are these numbers closer to 120 or 130?

Use the number line to help you complete the sentences.

121 is closer to ☐ than ☐

124 is closer to ☐ than ☐

127 is closer to ☐ than ☐

125 is the same distance from ☐ as it is from ☐

b) Round each number to the nearest 10

121 124 127 125

Key Questions:

What is the same what is different about rounding to the nearest 10 and nearest 100?

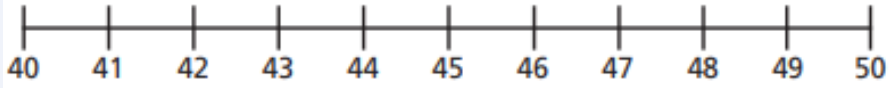
Why do numbers up to 49 round down to the nearest 100?

Can the answer be 0 when rounding?

L- To Round to the nearest 10, 100 or 1,000.

Independent Practice:

Here is a number line.



a) Which numbers round to 40?

b) Which numbers round to 50?

Round each number to the nearest 10

a) 41	**d)** 79	**g)** 33
b) 19	**e)** 9	**h)** 71
c) 25	**f)** 4	**i)** 99

Complete the table.

Number	624	371	289	750	38
Rounded to the nearest 10					
Rounded to the nearest 100					

There are 400 children in a school, to the nearest 100

What is the least number of children in the school?

What is the greatest number of children in the school?

L- To Round any number to the nearest 10, 100 or 1,000.

If you finish:

Using the digit cards 0 to 9, can you make whole numbers that fit the following rules? You can only use each digit once.

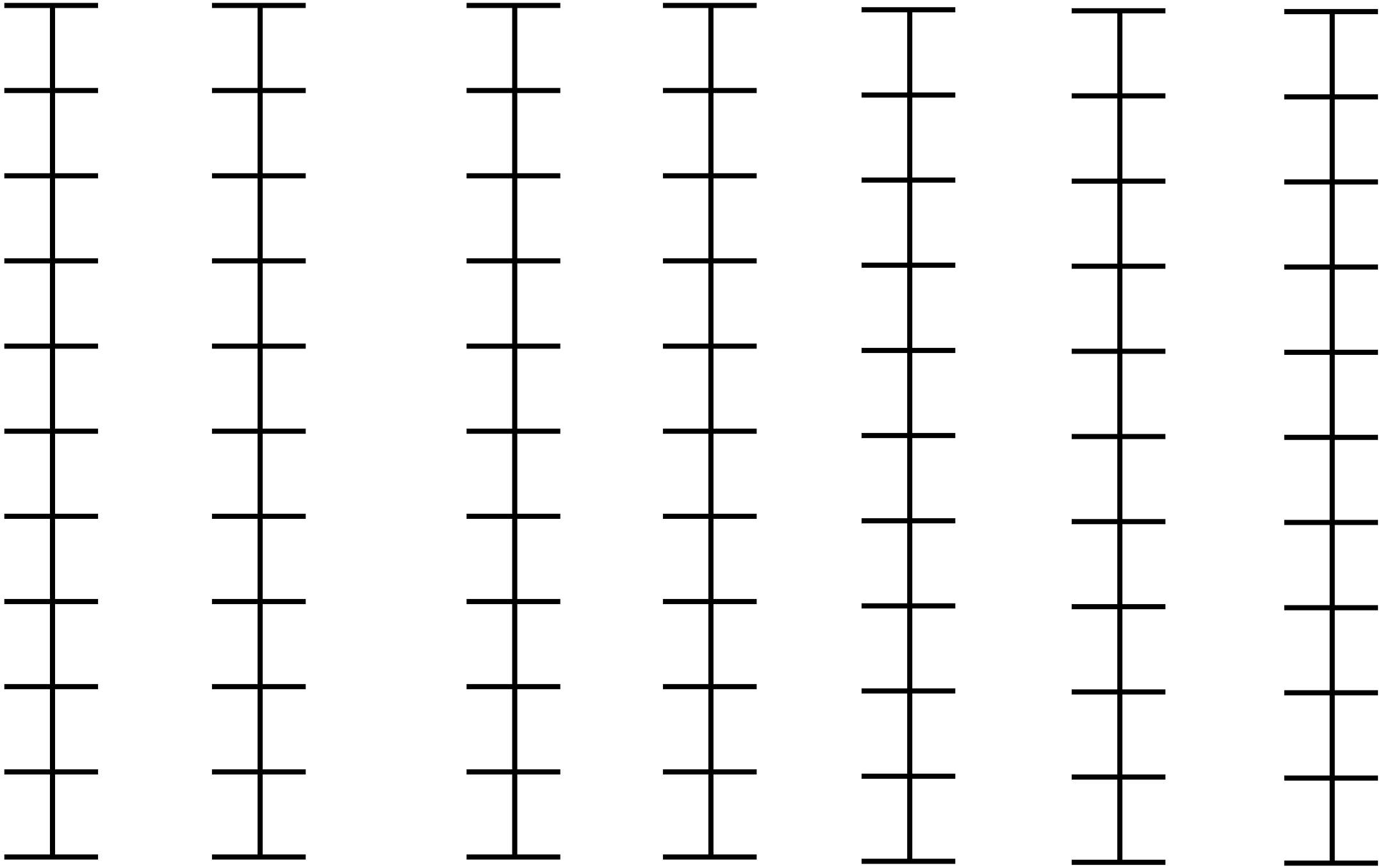
1. When rounded to the nearest 10, I round to 20
2. When rounded to the nearest 10, I round to 10
3. When rounded to the nearest 100, I round to 700

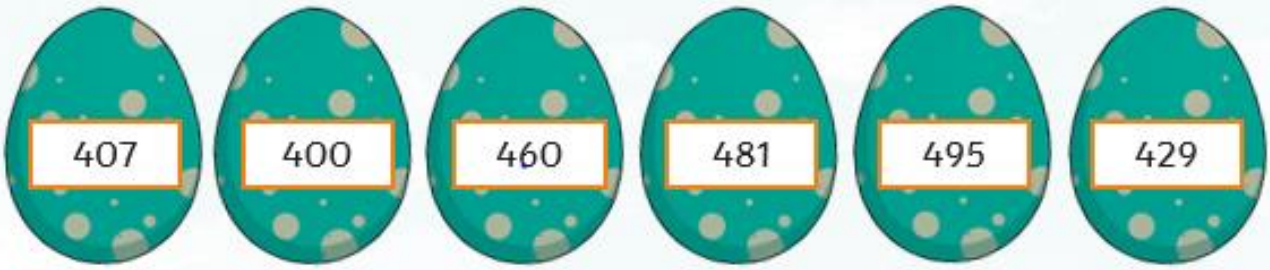
To 20, it could be 15 to 24

To 10, it could be 5 to 14

To 700, it could be 650 to 749

Use each digit once: 5, 24, 679 or 9, 17, 653 etc.




407
400
460
481
495
429

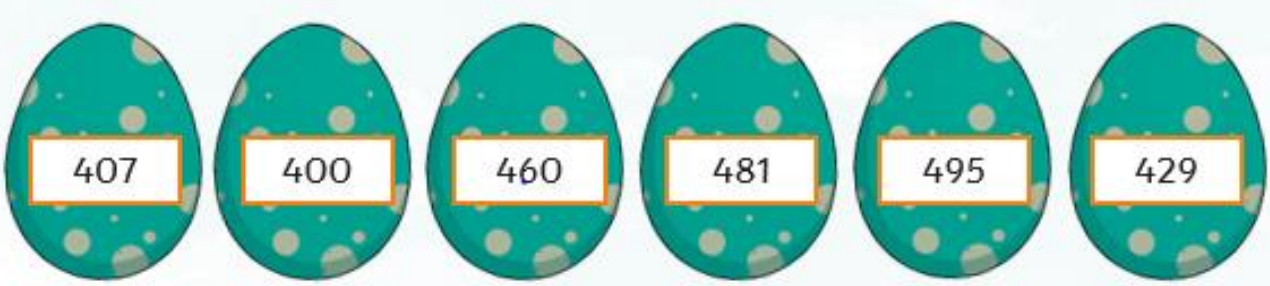
400

500

407
400
460
481
495
429

400

500


407
400
460
481
495
429

400

500

Arithmetic questions

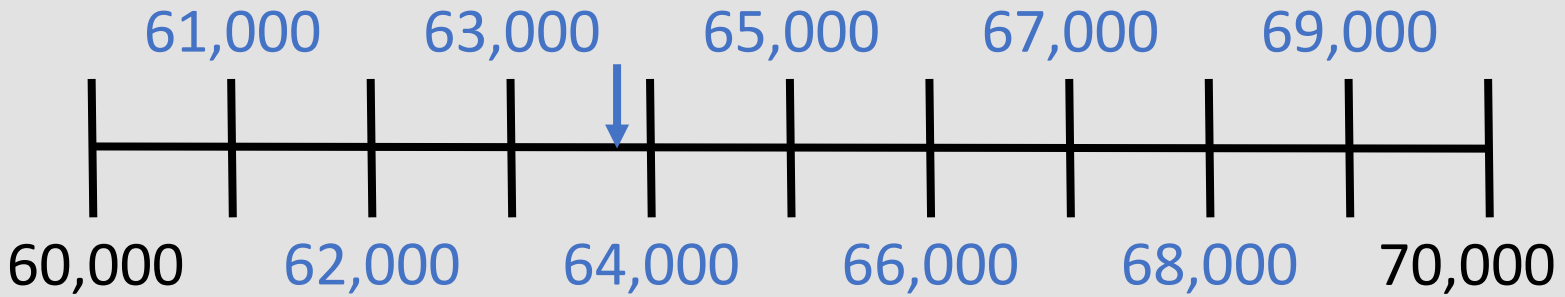
ANSWERS	
Multiplication Written Methods	**Back to Basics**
1.) 26,184	**5.)** 264
2.) 34,812	**6.)** 58,832
3.) 864	**7.)** 12,096
4.) 2,485	**8.)** 2,562

T- Round within 100,000

L-To round within 100,000

Recall

1) Label the number line.



2) Estimate the position of 63,812 on the number line.

3) 60,000 70,000 80,000 90,000 100,000

4) Round 7,443 to the nearest 1,000 7,000

L- To round within 100,000

Hook

Stadium	Capacity
Old Trafford in Manchester	75 731
Millenium Stadium in Cardiff	74 500
St James' Park in Newcastle upon Tyne	52 404
St Andrew's in Birmingham	30 009
Macron Stadium in Bolton	28 723
Ageas Bowl in Hampshire	25 000
Windsor Park in Belfast	20 000

Key Questions:

Why do you think the journalist chose 76 000 when the capacity is only 75 731?

Is there a special way in which we can round numbers?

Can you use a number line?

Can you use a bar graph?

L-To round within 100,000

Let's Learn

Round to nearest 10 → Ones column

Round to nearest 100 → Tens column

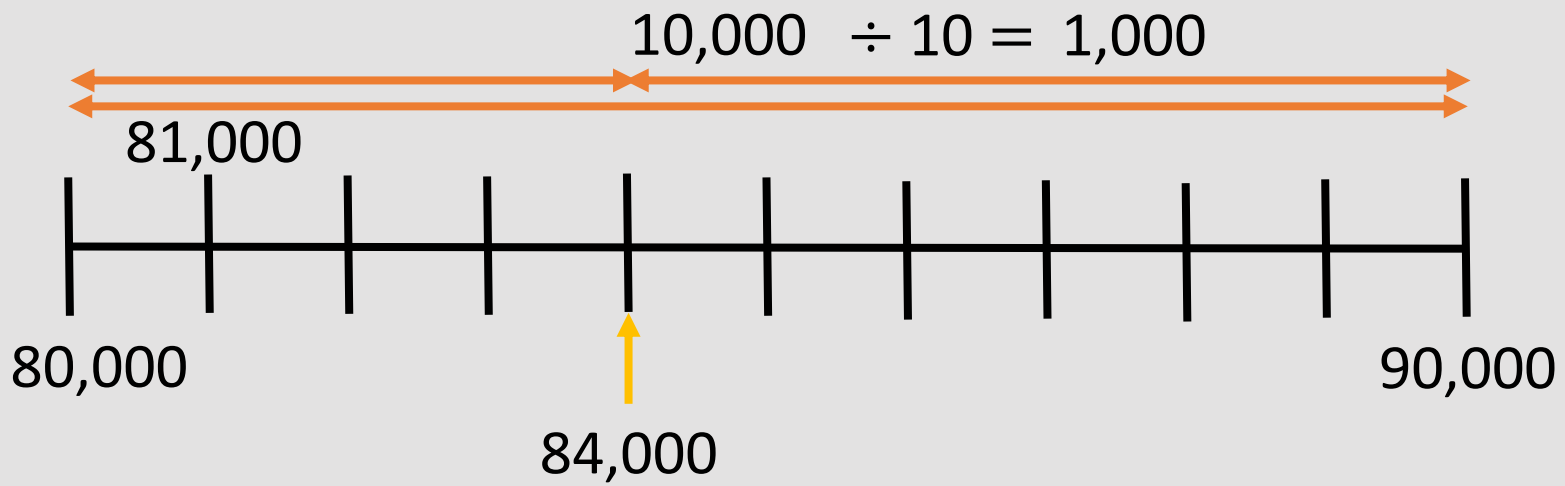
Round to nearest 1,000 → Hundreds column

Round to nearest 10,000 → Thousands column

L-To round within 100,000

Let's Learn

Round 84,000 to the nearest 10,000 80,000



The previous multiple of 10,000 is 80,000

The next multiple of 10,000 is 90,000

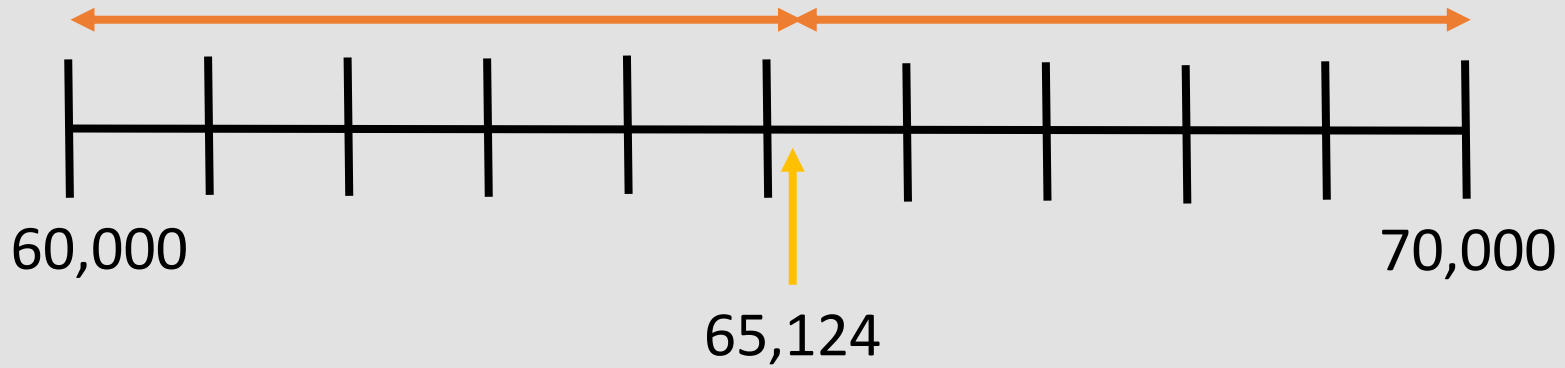
84,000 is closer to 80,000 than 90,000

84,000 rounded to the nearest 10,000 is 80,000

L-To round within 100,000

Let's Learn

Round 65,124 to the nearest 10,000 70,000



The previous multiple of 10,000 is 60,000

The next multiple of 10,000 is 70,000

65,124 is closer to 70,000 than 60,000

65,124 rounded to the nearest 10,000 is 70,000

L-To round within 100,000

Let's Learn

Round 84,000 to the nearest 10,000 80,000

Round 65,124 to the nearest 10,000 70,000

L-To round within 100,000

Let's Learn

Round 45,000 to the nearest 10,000

50,000

Round 42,989 to the nearest 10,000

40,000

Round 3,606 to the nearest 10,000

00,0000

To round within 100,000

Let's Have a go:

Round 85,617

- To the nearest 10
- To the nearest 100
- To the nearest 1,000
- To the nearest 10,000

Key Questions:

Is there more than one solution?

Will the answers to the nearest 100 and 1,000 be the same or different for the different start numbers?

To round within 100,000

Independent Practice:

Round the distances to the nearest 1,000 miles.

Destination	Miles from Manchester airport	Miles to the nearest 1,000
New York	3,334	
Sydney	10,562	
Hong Kong	5,979	
New Zealand	11,550	

Complete the table.

Rounded to the nearest 100	Start Number	Rounded to the nearest 1,000
	15,999	
	28,632	
	55,555	

Mo rounds a number to the nearest 1,000

a) Write three numbers Mo could have started with. Use the number line to help you.

b) What is the smallest number Mo could have started with?

c) What is the greatest number Mo could have started with?

To round within 100,000

If you finish:

Round 59,996 to the nearest 1,000
Round 59,996 to the nearest 10,000

What do you notice about the answers?

Can you think of three more numbers where the same thing could happen?

Both numbers round to 60,000

Other examples:

19,721 to the nearest 1,000 and 10,000

697 to the nearest 10 and 100

22,982 to the nearest 100 and 1,000

Arithmetic questions

ANSWERS	
Multiplication Written Methods	**Back to Basics**
1.) 27,006	**5.)** 413
2.) 1,161	**6.)** 9,966
3.) 44,856	**7.)** 14,581
4.) 16,443	**8.)** 3,088

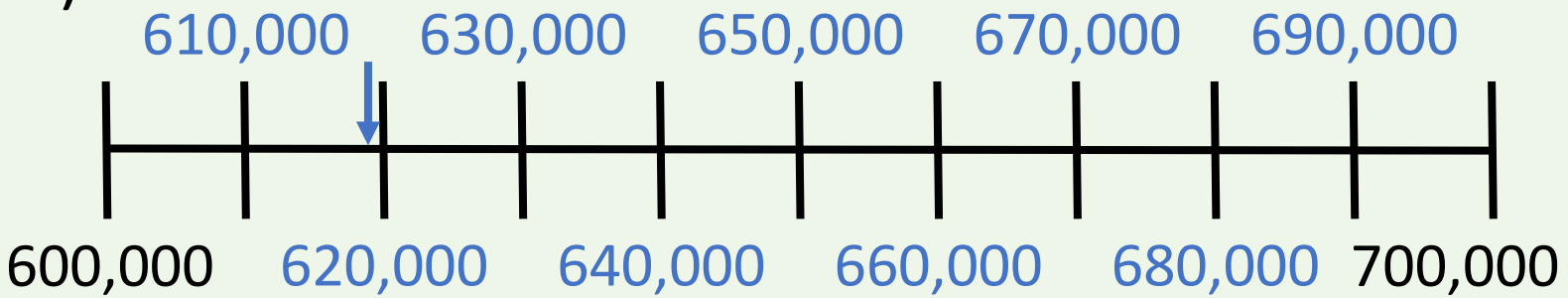
Year 5 | Autumn term | Block 1 – Place value | Step 14

T- Round within 1,000,000

L-To round any number up to 1,000,000

Recall

1) Label the number line.



2) Estimate the position of 619,000 on the number line.

3) 370,000 380,000 390,000 400,000 410,000

4) Round 45,943 to the nearest 10,000 50,000

L-To round any number up to 1,000,000

Hook

My number is 800,000 when rounded to the nearest 100,000

What is the greatest integer Amir could be thinking of?

What is the smallest integer Amir could be thinking of?

Key Questions:

What place value column should you look at to round the number to the nearest 100,000?

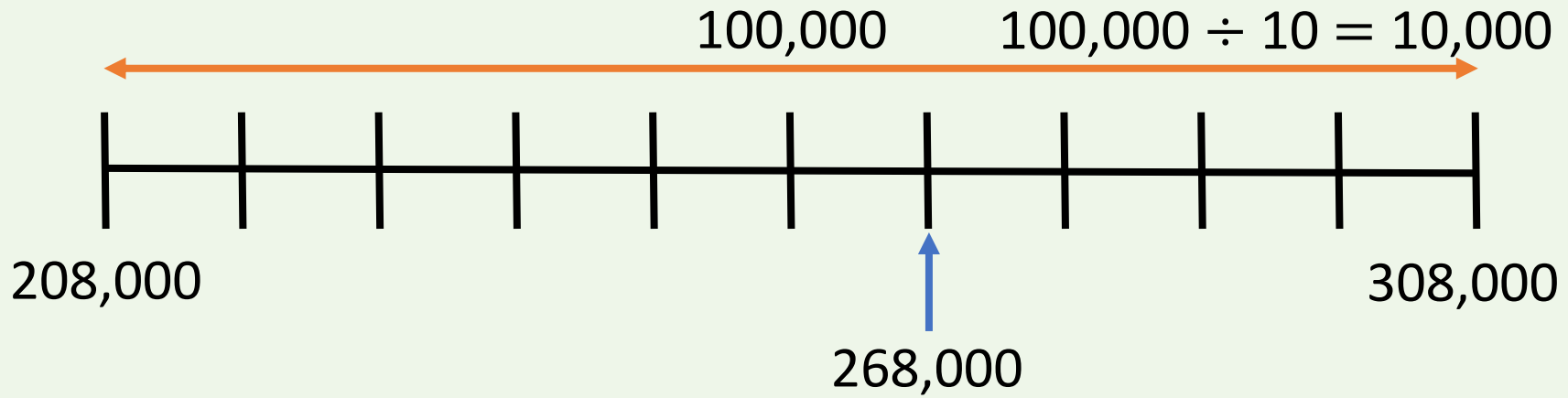
My friend says that the ones column digit must be zero. Is this true?

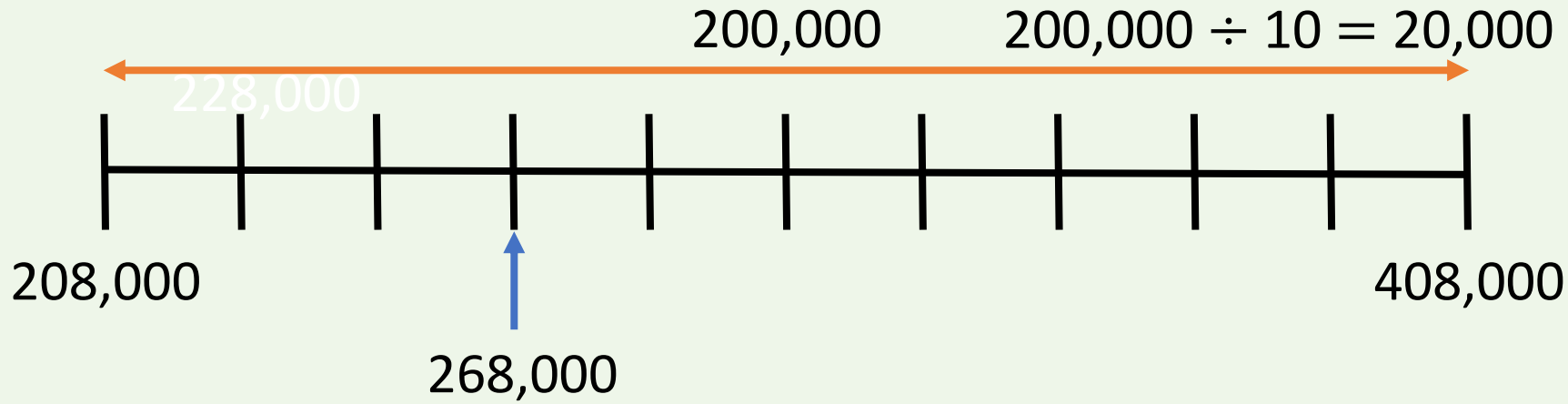
Mr friend says he would use a number line to solve this. How would that help?

To round any number up to 1,000,000.

Let's Learn:

Place 268,000 on the number lines.





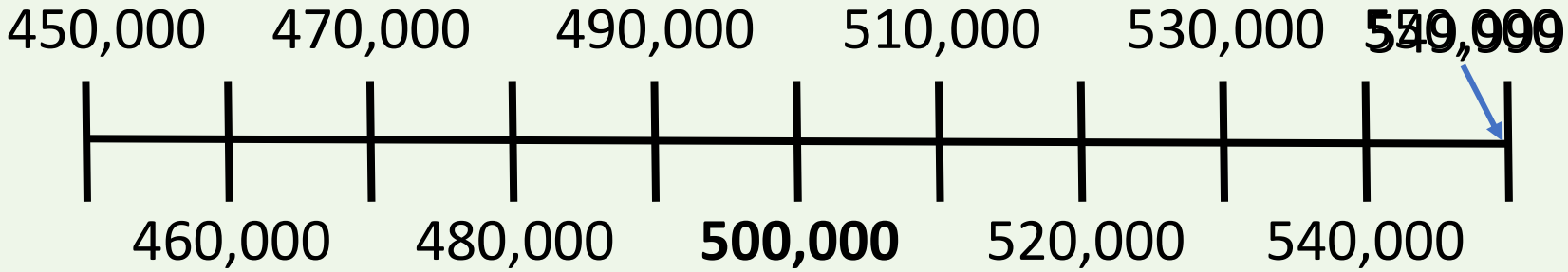
To round any number up to 1,000,000.

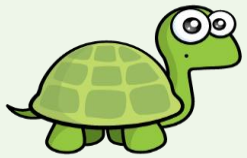
Let's Learn:

My number is 500,000 when I round it to the nearest 100,000

What is the smallest number Tommy could be thinking of?

450,000



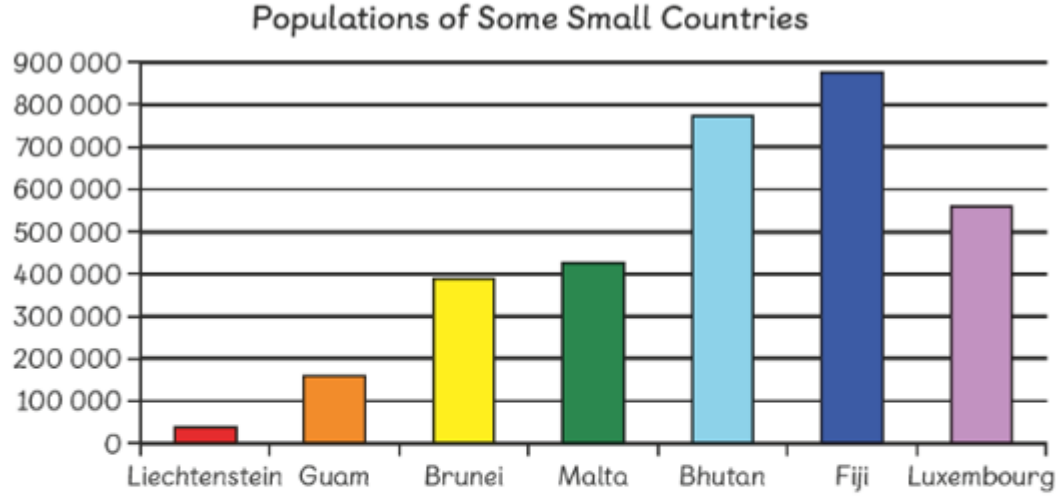


All the numbers on this number line round to 500,000 to the nearest 100,000

L-To round any number up to 1,000,000.

Let's Have a go:

1



Luxembourg

562 958 is closer to 600 000 than to 500 000.

562 958 ≈ 600 000 (rounded to the nearest 100 000)

Do the same for the other countries.

To round any number up to 1,000,000.

Independent Practice:

Round these populations to the nearest 100,000

City	Population	Rounded to the nearest 100,000
Leeds	720,492	
Durham	87,559	
Sheffield	512,827	
Birmingham	992,000	

Round 450,985 to the nearest

- 10
- 100
- 1,000
- 10,000
- 100,000

2 Round the numbers to the correct values.

a)	**432,442**	**b)**	**878,675**
to the nearest 10 is		to the nearest 10 is	
to the nearest 100 is		to the nearest 100 is	
to the nearest 1,000 is		to the nearest 1,000 is	
to the nearest 10,000 is		to the nearest 10,000 is	
to the nearest 100,000 is		to the nearest 100,000 is	

3 Tiles are sold in boxes of 10

a) Teddy's uncle needs 84 tiles.

Explain why Teddy is wrong.

To round any number up to 1,000,000.

If you finish:

At a festival, 218,712 people attend across the weekend.
Tickets come in batches of 100,000

How many batches should the organisers buy?

Place value

B

Name _____

1 What number is represented below?

TTh	Th	H	T	O
10,000 10,000 10,000 10,000 10,000		100 100 100	10	

_____

1 mark

Teddy says that the number is multiple of 5
Is Teddy correct? Explain your answer.

2 Complete the missing numbers.

92,046 = 90,000 + _____ + 40 + 6

_____ = 40,000 + 3000 + 10 + 9

50,000 + 1,000 + _____ = 52,080

1 mark

1 mark

3 marks

3 In a game, people have some play money to buy houses.
Each person starts with the following play money.

£100,000	£10,000	£1,000
£100,000	£10,000	£1,000
£100,000		£1,000
£100,000		£1,000
£100,000		

How much money does each person start with?

£ _____

1 mark

4 Circle **all** the numbers that round to 8,500 to the nearest 100

8,458 548 8,548 8,488 8,558

1 mark

5 Complete the bar model.

603,090		
600,000		90

1 mark

6 Tick the greater number. Explain your choice.

CXIX

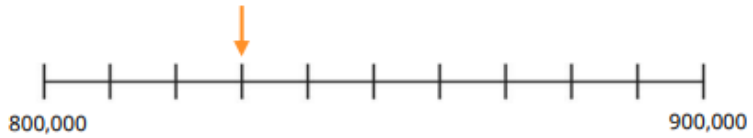
CXX

1 mark

White Rose Maths

7 What numbers are shown by the arrows?

1 mark



1 mark

8 Complete the statements using <, > or =

32,000 ◯ 20,000 + 12,000

Half a million ◯ 600,000

2 marks

9 Arrange the digit cards to make an even number between 80,000 and 100,000

4	5	6	7	9

1 mark

Round your number to the nearest 1,000

1 mark

Round your number to the nearest 10,000

1 mark

10 Complete the missing number.

22		100,022	150,022

1 mark

11 Put the weights is order starting with the smallest.

A	Thirty-seven thousand kg	B	203,000 kg
C	600,000 kg	D	76,000 kg

1 mark

smallest

12 Eva makes a 5-digit number.

- The thousands digit is a 1
- There are no tens or ones.
- The hundreds digit is 1 more than the ten thousands digit.
- The sum of all the digits is 10

What is 10,000 more than Eva's number?

2 marks

White Rose Maths