

Knowledge Organiser - Maths : Place Value

Place Value of Digits

Key Concepts

- Roman Numerals to 100
- Rounding to the nearest 10, 100 and 1000
- Counting in 25s and 1000s
- Recognising the place value of each digit in a four digit number
- Partitioning
- Comparing and ordering numbers
- 1000 more or less
- Negative numbers

Key Vocabulary

- increase/decrease
- rounding
- nearest
- negative number
- compare
- order
- digit
- sequence
- place value
- ones, tens, hundreds, thousands



Rounding

Rounding to the nearest 10

To round a number to the nearest 10, you should look at the ones digit. If the ones digit is 5 or more, round up. If the ones digit is 4 or less, round down.



In the number **427**, the ones digit is the **7**. **7** rounds up so **427 rounds up to 430**.

Rounding to the nearest 100

To round a number to the nearest 100, you should look at the tens digit. If the tens digit is 5 or more, round up. If the tens digit is 4 or less, round down.



In the number **328**, the tens digit is the **2**. **2** rounds down so **328 rounds down to 300**.

Rounding to the nearest 1000

To round a number to the nearest 1000, you should look at the hundreds digit. If the hundreds digit is 5 or more, round up. If the hundreds digit is 4 or less, round down.



In the number **1532**, the hundreds digit is the **5**. **5** rounds up so **1532 rounds up to 2000**.

Place value helps us know the value of a digit, depending on its place in the number.

TH	H	T	O
4	8	2	5

In the number above, the 4 digit is in the thousands place so it really means 4000.

The 8 digit is in the hundreds place so it really means 800.

The 2 digit is in the tens place so it really means 20.

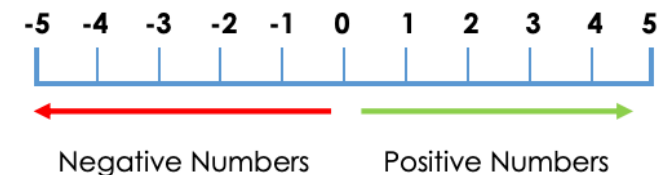
The 5 digit is in the ones place so it means 5.

Negative Numbers

If you count backwards from zero, you reach negative numbers.

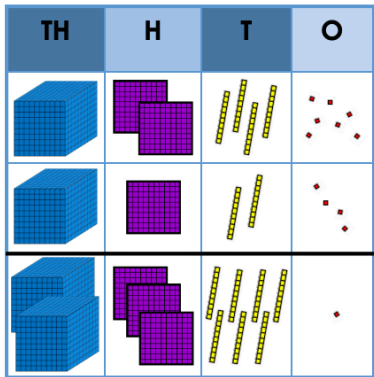
Positive numbers are any numbers **more than** zero e.g. 1, 2, 3, 4, 5.

Negative numbers are any numbers **less than** zero e.g. -1, -2, -3, -4, -5.



Addition

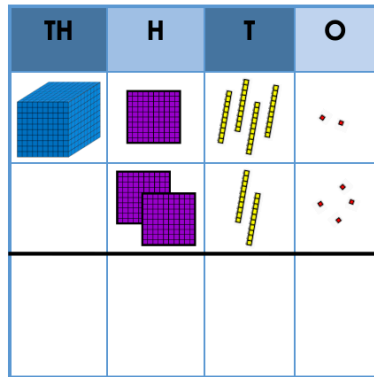
Using base 10 to show column addition:



	1	2	4	7
+	1	1	2	4
	2	3	7	1

Subtraction

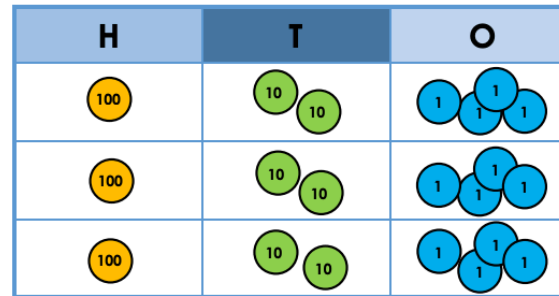
Using base 10 to show column subtraction:



	1	1	4	2
-		2	2	4

Multiplication

Pupils begin by using place value counters to understand written multiplication:



	1	2	4
x			3
	3	7	2

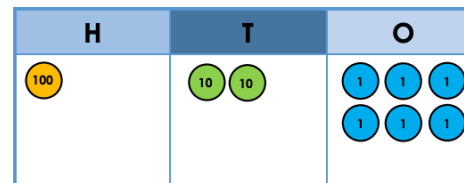
Key Vocabulary

- add/addition
- subtract/subtraction
- calculate/calculation
- mental calculation
- written method
- operation
- total
- amount
- exchange
- regroup
- multiply/multiplication
- divide/division
- calculate/calculation
- mental calculation
- written method
- operation
- remainder
- factor/factor pairs
- efficient
- exchange
- commutative law



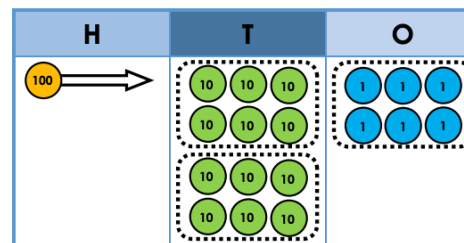
Division

Pupils begin by using place value counters to understand written division:



$$126 \div 6$$

Start with the hundreds column. As the 100 counter cannot be split into groups of 6, exchange it for 10 lots of 10 and put these counters into the tens column.



Addition & Subtraction, Multiplication & Division

Pupils transfer this understanding to a formal written method.

	0		
6	1	2	6

Start by looking at how many groups of 6 you can make with 1 hundred. You cannot make any complete groups of 6 so place a zero in the hundreds column. Then, exchange the 1 hundred for 10 tens so there are now 12 tens.

	0	2	
6	1	2	7

You can make two groups of 6 tens using 12 tens. Therefore, place 2 in the tens column.

	0	2	1
6	1	2	6

Finally, look at the ones digit. With 6 ones, you can make 1 group of 6 ones. This means that a 1 is placed in the ones column. The answer is 21.