Year 6: Phoenix
Mathematics
Autumn 1

Number:
Place Value
Four Operations

What is place value?

Place value refers to the value of each digit in a number. Place value helps us know the value of a digit, depending on its place in the number. The below number is made up of seven digits. Each digit has a particular value for example the 7 is worth seven hundred thousand (700,000). The 8 is worth eight hundreds (800).

M	HTh	TTh	Th	H	T	O
Millions	Hundred Thousands	Ten Thousands	Thousands	Hundreds	Tens	Ones
3	7	1	4	8	2	5

Key Vocabulary

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Place Value	compare	To determine which number is greater by comparing a place value starting from the greatest place value.
	integer	The mathematical term for a whole number (there are no fractions).
	rounding	To change one number to another less exact but more convenient for calculations. E.g. 458 could round to 460 to the nearest ten or 500 to the nearest hundred.
Four Operations	BIDMAS	An acronym for the order of operation. It stands for brackets, indices, division, multiplication, addition, subtraction. Therefore, you would solve calculations within brackets first and you would multiply or divide before adding.
	cubed number	A number that is multiplied by itself and then the product is multiplied by the original number. 4^3 is $4 \times 4 \times 4 = 16 \times 4 = 64$
	equal to	Represented by the mathematical symbol = it means the same value on either side of the sign e.g., $4 + 3 = 6 + 1$
	factor	A number or quantity that when multiplied with another produces a given number or expression. The factors of 12 are 1, 2, 3, 4, 6 and 12.
	greater than	Represented by the mathematical symbol > the value on the left is greater than the value on the right e.g., $8 > 6 + 1$
	less than	Represented by the mathematical symbol < the value on the left is less than the value on the right e.g., $4 + 3 < 8$
	multiple	A number that is found by multiplying an integer by another integer. E.g. 6, 9, 18 and 24 are multiples of 3.
	negative numbers	A number that is below 0. For example, -1. This can be used to represent changes in temperature or money.
	prime number	A prime number only has two factors. Those are one and itself – the lowest prime number is 2 and it is the only even prime number!
	squared	A number that is multiplied by itself. 3^2 is 3×3 so it is 9.

Rounding

When rounding you look at the place value column to the right. If it has the digit five or more, you round up. If it is 4 or less, you leave the digit in your column the same. All place value columns below it then become 0.

Round to the nearest hundred
415 → 400
950 → 1000
7261 → 7300
7221 → 7200
36430 → 36400

BIDMAS

The order could change the answer:

$(2 + 3) \times 5 = 25$

You would calculate $2 + 3$ first as it is in the brackets then multiply by 5.

However, $2 + 3 \times 5 = 17$

You would calculate 3×5 first according to BIDMAS then add the 2.

A four-digit number is made up of thousand, hundreds, tens and ones. Different concrete manipulatives and pictorial diagrams can be used to represent these numbers.

The number 2,142 can be represented using dienes such as

These place value counters also show 2 thousands, 1 hundred, 4 tens, and 2 ones.

1000 1000 100 10 10 10 10 1 1