

Year 6 Ravens

Maths

Autumn 1



Number and Place Value

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

Partitioning. Numbers can be partitioned (broken apart) in more than one way. The number 3,714,825 could be partitioned in many ways such as: $3,000,000 + 700,000 + 10,000 + 4,000 + 800 + 20 + 5$ or $3,714,000 + 825$ or $3,700,000 + 14,000 + 700 + 125$ or $3,600,000 + 140,000 + 600 + 220 + 5$. We might represent this using a part-whole model

Representing Numbers

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.

Representing and partitioning numbers in different ways helps us to master calculations.

Key Vocabulary	Definition
Equal to	= symbol. The same value either side $4 + 3 = 6 + 1$
Greater than	> Symbol. The value on the right is greater. $4 + 3 > 6$
Less than	< symbol. The value on the right is less. $4 + 3 < 8$
Integer	A whole number. The number of steps between two numbers.
Rounding	To alter a number to one less exact but more convenient for calculations. E.g. 458 could round to 460 to the nearest ten or 500 to the nearest hundred.
Compare	To determine which number is greater by comparing a place value starting from the greatest place value.
Negative numbers	A number that is below 0. For example, -1. This can be used to represent changes in temperature or money.
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.
Multiple	A number that is a certain times another integer. E.g. 6, 9, 18 and 24 are multiples of 3.
Prime Number	A prime number only has two factors. Those are one and itself.
Squared	A number that is multiplied by itself. 3^2 is 3×3 so it is 9.
Cubed	A number that is multiplied by itself and then the product is multiplied by the original number. 4^3 is $4 \times 4 \times 4 = 16 \times 4 = 64$
BIDMAS	An acronym for the order of operation. You calculate those in brackets first, then any indices (squared and cubed), then divide, multiply, add then subtract.

Rounding: A rounded number has the same value at the starting number but is less exact.

The rule is: Find the column, look right next door, 5 or more, raise the score, 4 or less, let it rest.

Round to the nearest ten

54 → 50
 55 → 60
 313 → 310
 549 → 550
 1221 → 1220

Round to the nearest hundred

415 → 400
 950 → 1000
 7261 → 7300
 7221 → 7200
 36430 → 36400

BIDMAS

$(2 + 3) \times 5$ is 25 because you calculate $2 + 3$ first as it is in the brackets.

$2 + 3 \times 5$ is 17 because you calculate 3×5 first according to BIDMAS then add the 2.