Year 6

Number

C<u>hildren are expected to:</u>

♦ **Read, write, order and compare numbers to at least 10,000,000 and determine the value of each digit.**

♦ **Round any whole number to a required degree of accuracy.**

♦ **Use negative numbers in context and calculate intervals across zero.**

♦ **Solve number and practical problems that involve all of the above.**

Building on the learning from lower KS2, children are now expected to know and use the multiples of all numbers from 1-12 as well as 25, 50, 100 and 1000. Using their knowledge of partitioning five, six and seven digit numbers from Year 5, they can apply this knowledge to partitioning eight-digit numbers and understand the place value of the digit in the ten-millions column.

These objectives are taught using practical objects and manipulatives and through the use of games, songs and interactive activities.

The children are encouraged to partition numbers in different ways and continue to develop their understanding of zero as a place holder.

It is important that the children have a deep understanding of these objectives in order to successfully access the calculation objectives. Therefore lots of time is spent in school embedding basic number facts and ensuring that the children have a deep understanding of place value (the value of each digit in a multi-digit number).

addition and subtraction

C<u>hildren are expected to:</u>

♦ **Perform mental calculations, including mixed operations and large numbers.**
♦ **Solve addition and subtraction multi-step problems in contexts, deciding which operations to use and why.**

By this stage, children should be familiar with using **bar models** to help them identify the correct operation or operations needed to solve the problem.

Emily, Ben and Nisha take part in a sponsored swim to collect money for charity.

Emily collects £2.75 **more** than Nisha.

Ben collects £15

Nisha collects £7 **less** than Ben.

Altogether how much money do the three children collect?

Emily | £15 + £2.75

Ben | £15

Nisha | £15 - £7

?

Bar models are a visual interpretation of the question. There is no 'incorrect' way to draw the model, however there may be a model that demonstrates the question and therefore the operation required to solve the problem more effectively.

From EYFS, children are encouraged to draw bar models to represent word problems in order to support their understanding of word problems.

addition and subtraction

♦ **Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.**
♦ **Use their knowledge of the order of operations to carry out calculations involving the four operations.**

Children continue to consolidate their understanding of the column method of addition and subtraction for numbers with up to 8 digits. They should use this method to solve addition and subtraction problems involving numbers with up to three decimal places and when a problem involves more than 2 numbers.

Children should continue to estimate answers using rounding and check answers using the inverse operation.

Children continue to practise solving addition and subtraction problems mentally with increasingly larger number using a range of mental strategies.

In Year 6, children are introduced to the use of brackets and the order of operations known by acronym BIDMAS.

Bidmas

B	**Brackets**	$10 \times (4 + 2) = 10 \times 6 = 60$
I	**Indices**	$5 + 2^2 = 5 + 4 = 9$
D	**Division**	$10 + 6 \div 2 = 10 + 3 = 13$
M	**Multiplication**	$10 - 4 \times 2 = 10 - 8 = 2$
A	**Addition**	$10 \times 4 + 7 = 40 + 7 = 47$
S	**Subtraction**	$10 \div 2 - 3 = 5 - 3 = 2$

Children are taught to use this order of operations to solve problems involving mixed operations.

Key vocabulary and symbols
Place value, digit, negative number, approximate, round, decimal place, check, solution, answer, estimate, order of magnitude, accurate, accuracy, addition, subtraction, sum, total, more, less, difference, minus, column addition, column subtraction, operation, <, >, -, +, =.